



U.S. DEPARTMENT  
OF TRANSPORTATION

National Highway  
Traffic Safety  
Administration

***National Automotive Sampling  
System (NASS)  
General Estimates System (GES)***

***Analytical User's Manual  
1988-2004***



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# **NASS GES Analytical User's Manual**

## **1988 - 2004**

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**U. S. Department of Transportation**  
National Highway Traffic Safety Administration  
National Center for Statistics and Analysis  
Washington, D.C. 20590

## TABLE OF CONTENTS

New in 2004 GES .....	2
Introduction .....	3
GES Operations.....	4
GES Sample Design.....	5
National Estimates.....	7
GES SAS Data Sets .....	8
GES Imputation .....	11
GES Variable List .....	13
GES Variable Definitions and Codes:.....	19
Accident Data Set .....	19
Event Data Set .....	53
Vehicle/Driver Data Set.....	58
Distract Data Set.....	125
Factor Data Set.....	126
Maneuver Data Set.....	127
Trafcon Data Set.....	128
Violatn Data Set.....	129
Vision Data Set .....	130
Person Data Set.....	131
Impair Data Set.....	151
Nmaction Data Set.....	152
Safetyeq Data Set.....	153
Biketraf Data Set.....	154
Appendices:	
A.    Make/Model Designation.....	156
B.    V23 Accident Type Diagram .....	194
C.    Summary Statistics .....	195
D.    Statistical Methods .....	197
E.    Analytical Data Classification of Select GES Variables .....	214

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<b>New in 2004 GES</b>
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Variables where attributes and/or SAS codes changed in 2004 are noted below. The analyst should consult the 2004 GES Coding Manual for a complete description of changes in definitions and coding instructions.

**Accident.Wrk\_Zone** (A25, WORK ZONE): The variable now includes information on first harmful events related to, but not in, a work zone. Attributes are added.

**Vehicle.Vis\_Obsc** and **Vision.MVisObsc** (D04 and M\_D04, DRIVER'S VISION OBSCURED BY): attributes **Not on PAR** and **Not Coded** replace **Not Reported**.

**Vehicle.Drman\_Av** and **Maneuver.MDrmanAv** ( D06 and M\_D06, DRIVER MANEUVERED TO AVOID): the attribute **Phantom Vehicle** is added.

**Vehicle.Dr\_Dstrd** and **Distract.MDrDstrd** (D07 and M\_D07, DRIVER DISTRACTED BY) The attribute **Other Distraction/Inattention** is changed to **Other Distraction** and the attribute **Distraction/Inattention, Details Unknown** is added.

**Person.Eject** (P06, EJECTION): attributes **Not on PAR** and **Not Coded** are added.

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## Introduction

One of the primary objectives of the National Highway Traffic Safety Administration (NHTSA) is to reduce the staggering human toll and property damage that motor vehicle traffic crashes impose on our society. Crashes each year result in thousands of lives lost, hundreds of thousands of injured victims, and billions of dollars in property damage. Accurate data are required to support the development, implementation, and assessment of highway safety programs aimed at reducing this toll. NHTSA uses data from many sources, including the National Automotive Sampling System General Estimates System (GES) which began operation in 1988. Providing data about all types of crashes involving all types of vehicles, the GES is used to identify highway safety problem areas, provide a basis for regulatory and consumer information initiatives, and form the basis for cost and benefit analyses of highway safety initiatives.

The GES obtains its data from a nationally representative probability sample selected from the estimated 6.2 million police-reported crashes which occur annually. These crashes include those that result in a fatality or injury and those involving major property damage. Although various sources suggest that there are many more crashes that are not reported to the police, the majority of these unreported crashes involve only minor property damage and no significant personal injury. By restricting attention to police-reported crashes, the GES concentrates on those crashes of greatest concern to the highway safety community and the general public.

This multi-year analytical user's manual provides documentation on variables that are contained in the GES and other useful information that will enable the users to become familiar the data system.

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## **GES Operations**

The GES is directed by the National Center for Statistics and Analysis, which is a component of Policy and Operations in NHTSA. The data are obtained by GES data collectors in 60 geographic sites across the United States. These data collectors make weekly, biweekly, or monthly visits to approximately 400 police agencies within the 60 sites. During the visit the data collectors compile a list all of qualifying crashes reported since their last visit and then select a sample of these crashes. The collectors send copies of the Police Accident Reports (PARs) for the selected crashes to a contractor for coding. Trained personnel interpret and code data directly from the PARs onto an electronic file. To protect individual privacy, no personal information such as names, addresses, specific crash location, etc., is coded.

During data coding, the data are checked for validity and consistency. After the data file is created, quality checks are performed on the data. When these are completed, the electronic data are made available to governments, researchers, motor vehicle manufacturers, insurance companies, and others. The GES data are also used to respond to requests from the international and national highway safety communities, state and local governments, the Congress, federal agencies, research organizations, industry, the media, and private citizens. Annual GES data files are available for 1988 through 2004.

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## GES Sample Design

The police accident reports (PARs) from which GES data are coded are a probability sample of police-reported crashes that occurred in the United States. Since each crash that occurred in the survey year had a chance of being selected, the design makes it possible to compute not only national estimates but also probable errors associated with the estimates.

The selection of the sample of PARs for the GES is accomplished in three stages. The first stage is a sample of geographic areas, called Primary Sampling Units (PSUs), from across the United States. A PSU is either a central city, a county surrounding a central city, an entire county, or a group of contiguous counties. GES divides the U.S. into 1,195 of these PSUs. The PSUs are then grouped into categories according to the following geographic regions and types of PSUs:

- Geographic Region: Northeast, Midwest, South, and West
- Type: Large Central City, Large Suburban Area, and All others.

The second stage of the design is a sample of police jurisdictions within each PSU. In most PSUs the number of police jurisdictions is more than can reasonably be visited by a data collector, so in most PSUs the police jurisdictions are sampled based upon probability proportional to the number of crashes investigated in the police jurisdiction. That is, as the number of crashes investigated increases, the probability of selecting that jurisdiction increases. An average of six or seven police jurisdictions have been selected within each PSU.

The third and final stage is the selection of crashes within the sampled police jurisdictions. The first step in this process is for the GES data collector to compile a list of every crash that was reported in the police jurisdiction since their last visit. In some very large police jurisdictions the number of crashes is too large for each to be listed. In these jurisdictions the data collector selects a subsample of PARs, with those listed depending on the PAR number. These “listed” crashes are then grouped into 6 strata depending on the type of vehicle(s) involved, the severity of the injuries, and the tow status of the vehicle(s) involved. Within each of these 6 groups a systematic sample of crashes is selected, based on different sampling ratios.

From 2002 to the present, crashes have been grouped into 6 strata:

- Group 1L: NASS crashes where an occupant of a towed passenger vehicle is killed. This category also includes crashes where an occupant of a towed passenger vehicle received an incapacitating injury and is transported for treatment. If the crash involves two or more passenger vehicles, at least two passenger vehicles must be towed and at least one of the occupants of a towed passenger vehicle must receive an incapacitating injury and be transported for treatment. No medium or heavy trucks may be involved.
- Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.

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- Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed. No medium or heavy trucks may be involved.
  - Group 2: NASS crashes not qualifying for *Group 1*, involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C;
  - Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B; and,
  - Group 4: NASS crashes not qualifying for *Group 1, 2, or 3*, No one in the crash can receive a K, A, or B injury.

Prior to 2002, crashes in Groups 1L, 1M, and 1N were in a single Group 1. It was made up of crashes involving at least one passenger vehicle, (a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks were involved.

In 2004, approximately 60,100 PARs were sampled and coded.

A thorough discussion of the sample design can be found in the ***National Accident Sampling System General Estimates System Technical Note***, DOT HS 807 796. The document is available on the Web at <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html>.



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## National Estimates

Since the GES data are obtained from a probability sample of police-reported traffic crashes, national estimates can be made from these data. In order to calculate estimates of national crash characteristics, data from each PAR on the file must be weighted. The national weight has been added to the file for each PAR and is called "WEIGHT". Technically, this weight is the product of the inverse of the probabilities of selection at each of the three stages in the sampling process.

In 1995, the methodology for calculating the national weight in the GES was evaluated. Based on 1992 state data obtained through state agencies for each of the 1,195 Primary Sampling Units (PSUs), it was determined that the number of fatal and injury crashes increased throughout the 12 geographical and urbanization areas, and that the changes were large enough to warrant some modification in procedures. PSUs in the GES had not been reselected since the 1986 redesign because of the cost and time required to do so. To account for shifts in the distribution of crashes, the procedures used to stratify and select the PSUs in 1979 and 1986 were followed, without actually resampling the PSUs. Rather, the weights of the current PSUs were adjusted to reflect changes. The revised weights were phased into the 1993, 1994 and 1995 GES files. Therefore, estimates from the GES for 1993-95 have been revised.

Because some of the changes were so dramatic, NHTSA decided to make adjustments to the PSU weights every three years. For more information on reweighting of the PSUs in the GES, refer to the research note, ***Reweighting of the Primary Sampling Units in the National Automotive Sampling System***, published September 1997. This document is available on the Web at <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/RNotes/1997/Psunote.pdf>.

The second round for making adjustments to the PSU weights was implemented in 1998. Some of the same procedures used in the first round also were used in the second round. Using 1995 state data obtained through state agencies, the number of fatal and injury crashes throughout the 12 regional and urbanization areas were evaluated. Overall, there was a decrease in the number of crashes. The PSU weights were revised to reflect the shift and the revised weights were phased into the 1996 and 1997 GES files. Therefore, estimates from the GES for 1996-98 have been revised.

A weight variable is provided in the GES data files that produces the national estimates (see GES Variables and Definitions).

The national estimates produced from GES data may differ from the true values because they are based on a probability sample of crashes and not a census of all crashes. The size of these differences may vary depending on which sample of crashes was selected. The standard error of an estimate is a measure of the precision or reliability with which an estimate from this particular GES sample approximates the results of a census.

It is impractical to compute a standard error for each national estimate crash characteristic. Instead, generalized standard errors for estimates of totals, and the method used to produce them, are provided in Appendix D.

For more information on GES estimation and the reliability of these estimates, refer to the ***National Accident Sampling System General Estimates System Technical Note***, DOT HS 807 796, available on the Web at <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html>.

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## GES SAS Data Sets

GES data are made available to the public in Statistical Analysis System (SAS) data sets. Over the years changes have been made to the type of data collected and the way the data have been organized in the SAS data sets. Some variables have been dropped and new ones added, coding of individual variables has changed, and new SAS data sets have been created. Coding changes and the years for which individual data items are available are shown in the “Variables and Definitions” section of this document. A detailed description of each variable including coding instructions and definitions of attributes can be found in the GES Coding Manual, which is published for each year of data collection. The GES Coding Manual is available on the Web, for various years, at <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html>. The following discussion highlights major changes in SAS data sets.

From 1988 to 1999 GES data items were organized into three SAS data sets: the Accident, Vehicle/Driver, and Person data sets. Starting in 2000, the Event data set is also available. These four data sets contain the following types of information:

- The *Accident Data Set* contains information on crash characteristics and environmental conditions at the time of the crash. There is one record per crash.
- The *Vehicle/Driver Data Set* contains information describing the vehicles and drivers involved in the crash. There is one record per vehicle.
- The *Person Data Set* contains general information describing all persons involved in the crash: drivers, passengers, pedestrians, pedalcyclists, and other non-motorists. It includes information such as age, sex, vehicle occupant restraint use, and injury severity. There is one record per person.
- The *Event Data Set* contains a brief description of each harmful event in a crash including the vehicles or objects involved and the general area of vehicle damage. The most harmful event number for each vehicle is recorded in the Vehicle data set, enabling the identification of the vehicle or object involved in the vehicle's most harmful event. There is one record per event.

A number of new variables and new SAS data sets were issued in 2002 as a result of changes in NHTSA's data collection system. The new data sets and variables are summarized below.

Starting in 2002, a number of roadway characteristic variables that had been available only at the Accident level were also made available at the Vehicle level. Prior to 2002, an algorithm had been used to select one roadway for coding roadway characteristics for a crash. Under the new system, roadway characteristics are coded for each vehicle in a crash. For example, in an intersection crash, one vehicle may be traveling on a snow-covered road surface while the other involved vehicle is traveling on a roadway that is cleared and dry. Or one vehicle may be controlled by a stop sign while the other vehicle is not. These types of situations may now be identified using the new variables. The seven roadway characteristic variables added to the Vehicle data set in 2002 are:

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- Trafficway flow (SAS variable VTRAFWAY, GES Locator Code V\_A11),
  - Number of travel lanes (SAS variable VNUM\_LAN, GES Locator Code V\_A12),
  - Roadway alignment (SAS name VALIGN, GES Locator Code V\_A13),
  - Roadway profile (SAS variable VPROFILE, GES Locator Code V\_A14),
  - Roadway surface condition (SAS variable VSURCOND, GES Locator Code V\_A15),
  - Traffic Control Device (SAS variable VTRAFCON, GES Locator Code V\_A16), and
  - Speed limit (SAS variable VSPD\_LIM, GES Locator Code V\_A18).

A second change was to record multiple responses for data items like violations charged, driver distractions, and non-motorist actions. Prior to 2002, if the Police Accident Report had more than one response for these types of variables an algorithm was used to select only one response for a vehicle, driver, or non-motorist, and the variables were in the Vehicle/Driver or the Person data set. Starting in 2002 all information on the PARs for these types of variables is available in individual SAS data sets. Also, the response selected at the Vehicle/Driver or Person level is still available. The following data sets for the multiple response data were added to GES in 2002:

- The *Factor Data Set*, with information on vehicle-related factors that may have contributed to the cause of the crash, contains at least one record per vehicle. If more than one factor is identified for a vehicle each is coded on a separate record. (SAS variable MFACTOR, GES Locator Code M\_V12)
- The *Violatn Data Set*, with information on violations that were charged to drivers, contains at least one record per vehicle. If more than one violation is identified for a vehicle each is coded on a separate record. (SAS variable MVIOLATN, GES Locator Code M\_D02)
- The *Vision Data Set*, with information on circumstances that may have obscured the driver's vision, contains at least one record per vehicle. If more than one obstruction is identified each is coded on a separate record. (SAS variable MVISOBSC, GES Locator Code M\_D04)
- The *Maneuver Data Set*, with information on actions taken by the driver to avoid something or someone in the road, contains at least one record per vehicle. If more than one maneuver is identified each is coded on a separate record. (SAS variable MDRMANAV, GES Locator Code M\_D06)
- The *Distract Data Set*, with information on driver distractions, contains at least one record per vehicle. If more than one distraction is identified each is coded on a separate record. (SAS variable MDRDSTRD, GES Locator Code M\_D07)
- The *Impair Data Set*, with information on physical impairments, for drivers and non-motorists, that may have contributed to the cause of the crash. There is one record per impairment, and there is at least one record for each driver and non-motorist. (SAS variable MIMPAIR, GES Locator Code M\_P18 )
- The *Nmaction Data Set*, with information on actions of non-motorists that may have contributed to the cause of the crash. There is one record per action, and there is at least one record for each non-motorist, except that there are no records for occupants of motor vehicles not in transport. (SAS variable MACTION, GES Locator Code M\_P19 )

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- The *Safetyeq Data Set*, with information on safety equipment used by non-motorists. There is one record per equipment item, and there is at least one record for each non-motorist, except that there are no records for occupants of motor vehicles not in transport. (SAS variable MSAFEQMT, GES Locator Code M\_P20)

Two other data sets were added in 2002 to accommodate multiple traffic control devices for a vehicle or for a cyclist. They are:

- The *Trafcon Data Set*, with information on traffic control devices for each vehicle in a crash. There is one record per traffic control device, and at least one record for every vehicle. (SAS variable MTRAFCON, GES Locator Code MV\_A16)
- The *Biketraf Data Set*, with information on traffic control devices for each cyclist. There is one record per traffic control device, and at least one record for every cyclist. (SAS variable BTRAFCON, GES Locator Code MB\_A16)

The Variable Definitions and Codes section of this report contains detailed information on each SAS variable organized by SAS data set.

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<b>GES Imputation</b>
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GES data are obtained either directly from an item on the PAR or by interpreting the information provided in the report through reviewing the crash diagram, the Officer's written summary of the crash, or combinations of variables on the PAR. Because of this interpretation, and because the police officer may not have entered some item of information or provided complete information, data can be missing. Two different statistical procedures have been used on GES data to complete values for unknown data: univariate imputation and hot-deck imputation. A thorough discussion of the imputation procedures can be found in *Imputation in the NASS General Estimates System*, DOT HS 807 985. This document is available on the Web at <http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/AvailInf.html>.

The proportion of unknowns for a given variable varies from year to year. In some years the proportion is so low that it seems redundant to provide an imputed variable, however imputed variables are not removed for those years to avoid rounds of removing and then reinstating variables in the SAS data sets.

The univariate imputation procedure was developed in SAS to randomly assign values to the unknowns in the same proportion as the known values for that one variable. Since these imputed values are randomly assigned the analyst should use them only for univariate frequency distributions. The following is an example of univariate imputation using the variable *EJECTION*. The original distribution might be:

<b>No</b>	<b>60</b>
<b>Yes</b>	<b>40</b>
<b>Unknown</b>	<b><u>5</u></b>
<b>Total</b>	<b>105</b>

The SAS univariate imputation program would assign values to the five unknown values in the following proportions:

<b>No</b>	<b>60/100</b>
<b>Yes</b>	<b>40/100</b>

The new variable, *EJECT\_I* would have these values:

<b>No</b>	<b>63</b>
<b>Yes</b>	<b><u>42</u></b>
<b>Total</b>	<b>105</b>

Hot-deck imputation differs from univariate imputation in that the unknown values for a variable are replaced based on information from correlated variables. For example, the hot-deck imputation program for *SEX* used the following correlated variables: *AGE*, *HOURLY*, *DAY OF WEEK*, *VIOLATIONS CHARGED*, *PERSON TYPE*, *SEATING POSITION*, *DRUG & ALCOHOL INVOLVEMENT*, and *NUMBER OF OCCUPANTS & VEHICLES INVOLVED*. When *SEX* was unknown for a person record, the hot-deck program searches for another record that has a set

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imputation program for *SEX* used the following correlated variables: *AGE*, *HOURL*, *DAY OF WEEK*, *VIOLATIONS CHARGED*, *PERSON TYPE*, *SEATING POSITION*, *DRUG & ALCOHOL INVOLVEMENT*, and *NUMBER OF OCCUPANTS & VEHICLES INVOLVED*. When *SEX* was unknown for a person record, the hot-deck program searches for another record that has a set of variables similar to the unknown sex record. When that record is found, the *SEX* value is used for the unknown *SEX* record.

Hot-deck and univariate imputed variables can be identified by the *\_H* or *\_I* suffix in their SAS names. Hot-deck imputed *Body Type* is labeled *BDYTYP\_H* and univariate imputed *EJECTION* is labeled *EJECT\_I*. The imputed variables do not replace the originals; all original variables still exist on the data sets.

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<b>GES Variable List</b>
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There are 6 variables that are on each of the SAS data sets. They are:

**GES Case Number (CASENUM):** This variable is a unique number assigned to each crash. It appears on each of the data sets and is used to merge the data sets.

**Primary Sampling Unit (PSU):** There are 60 possible values ranging from 1 to 97. A PSU is either a large central city, a county surrounding a city, or a group of counties.

**Police Jurisdiction (PJ):** The number (range 1 through 120) of the police jurisdiction from which the PAR was originally sampled.

**Region of the Country (REGION):** Indicates the region of the country where the crash occurred. It is based on the primary sampling unit and is defined as follows:

- 1 = Northeast (PA, NJ, NY, NH, VT, RI, MA, ME, CT)
- 2 = Midwest (OH, IN, IL, MI, WI, MN, ND, SD, NE, IA, MO, KS)
- 3 = South (MD, DE, DC, WV, VA, KY, TN, NC, SC, GA, FL, AL, MS, LA, AR, OK, TX)
- 4 = West (MT, ID, WA, OR, CA, NV, NM, AZ, UT, CO, WY, AK, HI)

**Case Stratum (STRATUM):** The number of the category in which the PAR was originally listed in GES PAR Program or Stratification Record. From 1988 to 2001 there are 4 strata; starting in 2002 there are 6. See the section "GES Sample Design" for more information. SAS codes for Stratum are shown in the "Variable Definition and Codes – Accident Data Set" section.

**GES Case Weight (WEIGHT):** This is the variable used to produce national estimates from the data. See the section "National Estimates" for more information.

The "Variable Definitions and Codes" section of this report provides detailed information on the variables, including SAS formats. If the SAS variable has an associated format, the format name appears in brackets following the SAS variable name. Format names are given for the last three years. Format names for earlier years can be obtained from a SAS PROC CONTENTS for the year(s) of interest.

All variables are numeric except the following:

- VIN (V07) Character all GES years
- Driver Zip Code (D08) Character since 2002, numeric all prior years
- Motor Carrier ID (V31) Character since 2002, numeric all prior years

The following list shows all SAS variables with their SAS data set locations.

## ACCIDENT DATA SET

	<u>Variable Description</u>	<u>SAS Name</u>	<u>Page</u>
	Primary Sampling Unit Stratum	PSUSTRAT	19
A01	Month of the Crash	MONTH	19
A01B	Year of the Crash	YEAR	19
A01C	Day of the Week	WEEKDAY	20
A02	Hour of the Crash	HOUR	21
A02A	Minute of the Crash	MINUTE	21
A03	Number of Vehicles Involved	VEH_INVL	22
A03A	Number of Vehicles Coded	VEH_COD	22
A03B	Number of Persons Involved	PER_INVL	23
A03C	Number of Persons Coded	PER_COD	23
A04	Number of Non-Motorists Involved	NON_INVL	24
A04A	Number of Non-Motorists Coded	NON_COD	24
A05	Land Use	LAND_USE	25
A05A	Percentage Rural	RUR_URB	25
A06	First Harmful Event	EVENT1	26
A07	Manner of Collision	MAN_COL	28
A08	Interstate Highway	INT_HWY	29
A09	Relation to Junction	REL_JCT	30
A10	Relation to Roadway	REL_RWY	32
A11	Trafficway Flow	TRAF_WAY	33
A12	Number of Travel Lanes	NUM_LAN	34
A13	Roadway Alignment	ALIGN	35
A14	Roadway Profile	PROFILE	36
A15	Roadway Surface Condition	SUR_COND	37
A16	Traffic Control Device	TRAF_CON	38
A17	Traffic Device Functioning	DEV_FUNC	39
A18	Speed Limit	SPD_LIM	40
A19	Light Condition	LGHT_CON	41
A20	Atmospheric Condition	WEATHER	42
A21	School Bus Related	SCHL_BUS	43
A23	Stratum	STRATUM	44
A24	Pedestrian/Cyclist Crash Type	PED_ACC	45
A25	Work Zone	WRK_ZONE	48
A26	NHS Roadway Type	NHS_RWTP	49
A90	Maximum Injury Severity in Crash	MAX_SEV	50
A91	Number Known Injured in Crash	NUM_INJ	51
A92	Alcohol Involved in Crash	ALCOHOL	52
A18H	Hot-deck Imputed Speed Limit	SPDLIM_H	40
A01CI	Imputed Day of the Week	WKDY_I	20
A02I	Imputed Hour of the Crash	HOUR_I	21
A02AI	Imputed Minute of the Crash	MINUTE_I	21
A06I	Imputed First Harmful Event	EVENT1_I	27
A07I	Imputed Manner of Collision	MANCOL_I	28
A09I	Imputed Relation to Junction	RELJCT_I	31
A13I	Imputed Roadway Alignment	ALIGN_I	35
A14I	Imputed Roadway Profile	PROFIL_I	36
A15I	Imputed Roadway Surface Condition	SURCON_I	37
A16I	Imputed Traffic Control Device	TRFCON_I	39
A19I	Imputed Light Condition	LGTCO_I	41
A20I	Imputed Atmospheric Condition	WEATHR_I	42
A90I	Imputed Maximum Injury Severity	MAXSEV_I	50
A91I	Imputed Number Known Injured In Crash	NO_INJ_I	51
A92I	Imputed Alcohol Involvement	ALCHL_I	52



### **EVENT DATA SET**

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
E01	Crash Event Sequence Number	EVENTNUM	53
E02	Vehicle Number - This Vehicle	VEHNUM	53
E03	General Area of Damage - This Vehicle	GAD	54
E04	Vehicle Number (Other Vehicle) or Object Contacted	OBJCONT	55
E05	General Area of Damage - Other Vehicle	OBJGAD	56
E06	Vehicle Action	E_ACTION	57

### **VEHICLE/DRIVER DATA SET**

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
V01	Vehicle Number	VEHNO	58
V02	Hit and Run	HIT_RUN	58
V03	Vehicle Make	MAKE	59
V04	Vehicle Model	MODEL	59
V05	Body Type	BODY_TYP	60
V06	Model Year	MODEL_YR	65
V07	Vehicle Identification Number	VIN	66
V08	Special Use	SPEC_USE	67
V09	Emergency Use	EMCY_USE	68
V10	Number of Occupants Involved	OCC_INVL	69
V10A	Number of Occupants Coded	OCC_COD	69
V10B	Number of Occupants	NUMOCCS	69
V11	Travel Speed	SPEED	70
V12	Vehicle Defects	DEFECT	71
V12	Vehicle Contributing Factors	FACTOR	71
V13	Vehicle Trailing	TRAILER	72
V14	Jackknife	JACKKNIFE	73
V15	Rollover	ROLLOVER	74
V16	Fire Occurrence	FIRE	75
V17	Damage Area	DAM_AREA	76
V18	Damage Severity	VEH_SEV	77
V19	Manner of Leaving Scene	TOWED	78
V20	Most Harmful Event	V_EVENT	79
V20A	Most Harmful Event Number	MHENUM	81
V21	Movement Prior to Critical Event	MANEUVER P_CRASH1	82 83
V22	Vehicle Role	VEH_ROLE	84
V23	Accident Type	ACC_TYPE	85
V24	Initial Point of Impact	IMPACT	88
V25	Damage Areas	DAM_AREA	89
V26	Critical Event	P_CRASH2	90
V27	Corrective Action Attempted	P_CRASH3	95
V28	Vehicle Control After Corrective Action	P_CRASH4	96
V28	Preocrash Vehicle Control	PCRASH4	96
V29	Vehicle Path After Corrective Action	P_CRASH5	98
V29	Preocrash Location	PCRASH5	98
V30	Rollover Type	ROLLOVER	99

V31	Carrier's Identification Number (numeric)	C_ID_NO	100
V31	Carrier's Identification Number (character)	CARIDNUM	100
V32	Number of Axles, Including Trailers	AXLES	101
V33	Cargo Body Type	CARG_TYP	102
V34	Hazardous Materials Placarded	HAZ_MAT	103
V35	Hazardous Materials Placard Number	HAZM_NO	104
V36	Hazardous Materials Release	HAZ_MA_R	105
V90	Maximum Injury Severity in Vehicle	MAX_VSEV	106
V91	Number Injured in Vehicle	NUM_INJV	107
V92	Driver Drinking in Vehicle	VEH_ALCH	108
D01	Driver Presence	DR_PRES	109
D02	Violations Charged	VIOLATN	110
D03	Driver Physical/Mental Impairment	DR_IMPMT	111
D04	Driver's Vision Obscured By	VIS_OBSC	112
D05	Driver's Action	DR_ACT	113
D06	Driver Maneuvered to Avoid	DRMAN_AV	114
D07	Driver Distracted By	DR_DSTRD	115
D08	Driver's Zip Code (numeric)	DR_ZIP_C	116
D08	Driver's Zip Code (character)	DZIPCODE	116
D09	Speed Related	SPEEDREL	117
V_A11	Trafficway Flow-Vehicle	VTRAFWAY	118
V_A12	Number of Lanes- Vehicle	VNUM_LAN	119
V_A13	Roadway Alignment – Vehicle	VALIGN	120
V_A14	Roadway Profile-Vehicle	VPROFILE	121
V_A15	Surface Condition-Vehicle	VSURCOND	122
V_A16	Traffic Control Device-Vehicle	VTRAFCON	123
V_A18	Speed Limit	VSPD_LIM	124
V05H	Hot-deck Imputed Body Type	BDYTYP_H	64
V17H	Hot-deck Imputed Damage Area	DAM_AR_H	76
V20H	Hot-deck Imputed Most Harmful Event	V_EVNT_H	80
V24H	Hot-deck Imputed Initial Point of Impact	IMPACT_H	88
V02I	Imputed Hit and Run	HITRUN_I	58
V06I	Imputed Model Year	MDLYR_I	65
V21I	Imputed Movement Prior to Critical Event	MANEUV_I	83
V22I	Imputed Vehicle Role	VROLE_I	84
V90I	Imputed Maximum Injury in Vehicle	MXVSEV_I	106
V91I	Imputed Number Injured in Vehicle	NUMINJ_I	107
V92I	Imputed Driver Drinking in Vehicle	V_ALCH_I	108
D02I	Imputed Violations Charged	VLTN_I	110

#### ***DISTRACT DATA SET***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_D07	Driver Distracted By	MDRDSTRD	125

---

#### **FACTOR DATA SET**

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_V12 Vehicle Contributing Factors	MFACTOR	126

#### **MANEUVER DATA SET**

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_D06 Driver Maneuvered to Avoid	MDRMANAV	127

#### **TRAFCON DATA SET**

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
MV_A16 Traffic Control Device-Vehicle	MTRAFCON	128

#### **VIOLATN DATA SET**

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_D02 Violations Charged	MVIOLATN	129

#### **VISION DATA SET**

<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_D04 Driver's Vision Obscured By	MVISOBSC	130

#### **PERSON DATA SET**

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
P01	Vehicle Number	VEHNO	131
P02	Person Number	PERNO	131
P03	Person Type	PER_TYPE	131
P04	Seating Position	SEAT_POS	132
P05	Safety Equipment Used	SAF_EQMT	133
P06	Ejection	EJECT	134
P07	Age	AGE	135
P08	Sex	SEX	136
P9	Injury Severity	INJ_SEV	137
P10	Taken to Hospital or Treatment Facility	HOSPITAL	138
P11	Police-Reported Alcohol Involvement	PER_ALCH	139
P12	Non-Motorist's Physical/Mental Condition	PHY_COND	140
P13	Non-Motorist's Location	LOCATN	141
P14	Non-Motorist's Action	ACTION	142
P15	Restraint System Use	REST_SYS	143
P16	Restraint Type	REST_TYP	144

---

P17	Police-Reported Drug Involvement	PER_DRUG	145
P18	Person's Physical Impairment	IMPAIRMT	146
P19	Non-Motorist Action	ACTION	147
P20	Non-Motorist Safety Equipment Use	SAF_EQMT	148
P21	Air Bag Availability/Function	AIRBAG	149
P22	Non-Motorist Vehicle Striking Number	STR_VEH	150
P4H	Hot-deck Imputed Seating Position	SEAT_H	132
P7H	Hot-deck Imputed Age	AGE_H	135
P8H	Hot-deck Imputed Sex	SEX_H	136
P9H	Hot-deck Imputed Injury Severity	INJSEV_H	137
P11H	Hot-deck Imputed Police-Reported Alcohol Involvement	PERALC_H	139
P6I	Imputed Ejection	EJECT_I	134

#### ***IMPAIR DATA SET***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_P18	Person's Physical Impairment	MIMPAIR	151

#### ***NMACTION DATA SET***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_P19	Non-Motorist Action	MACTION	152

#### ***SAFETYEQ DATA SET***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
M_P20	Non-Motorist Safety Equipment Use	MSAFEQMT	153

#### ***BIKETRAF DATA SET***

	<b><u>Variable Description</u></b>	<b><u>SAS Name</u></b>	<b><u>Page</u></b>
MB_A16	Traffic Control Device-Cyclist	BTRAFCON	154

### **The Accident Data Set**

The Accident data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, AND PJ, which are discussed “GES Variable List” section. It also contains:

#### **Primary Sampling Unit Stratum**

---

**Definition:** The PSUs are grouped into 14 strata to reflect the first stage of the sample selection. This variable is used in the SUDAAN statistical system for calculating the variances. See Appendix D for more information.

**SAS Name: PSUSTRAT**

**Attribute Codes 1988-Later**

1 to 14

#### **A01 Month of the Crash**

---

**Definition:** The month in which the crash occurred.

**SAS Name: MONTH [A1Z.]**

**Attribute Codes 1988-Later**

1 = January  
2 = February  
3 = March  
4 = April  
5 = May  
6 = June  
7 = July  
8 = August  
9 = September  
10 = October  
11 = November  
12 = December

#### **A01B Year of the Crash**

---

**Definition:** The last two digits of the year in which the crash occurred. In 1999 year of the crash was changed to a four digit code.

**SAS Name: YEAR**

**Attribute Codes**

**1988-1998    1999-Later**

2 digit year    4 digit year

## **Variable Definitions and Codes – Accident File**

---

### **A01C Day of Week**

---

**Definition:** The day of the week in which the crash occurred. This variable is derived from the SAS Weekday function. The SAS Weekday function returns the day of the week from a date.

**SAS Name:** WEEKDAY [A1CZ.]

#### **Attribute Codes 1988- Later**

- 1 = Sunday
- 2 = Monday
- 3 = Tuesday
- 4 = Wednesday
- 5 = Thursday
- 6 = Friday
- 7 = Saturday
- 9 = Unknown

### **A01CI Univariate Imputed Day of Week**

---

**Definition:** This imputed variable has the same definition and element values as *Day of Week*, excluding value 9 for unknown day of week. (See *Understanding the GES Imputation Process* section of this manual)

**SAS Name:** WKDY\_I [A1CZ.]

## **Variable Definitions and Codes – Accident File**

---

### **A02 Hour of the Crash**

---

**Definition:** The hour in which the crash occurred. Military time is used. Noon is coded as "12" and midnight is coded as "24". For one minute after midnight to fifty-nine minutes after midnight the hour is coded as "00". Unknown hour is coded "99."

**SAS Name:** HOUR [A2Z.]

**Attribute Codes 1988-Later**

x = hour  
99 = unknown

### **A02I Univariate Imputed Hour of the Crash**

---

**Definition:** This imputed variable has the same definition and element values as *Hour of the Crash*, excluding value 99 for unknown hour. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** HOUR\_I [A2Z.]

### **A02A Minute of the Crash**

---

**Definition:** The minute in which the crash occurred. Possible values range from 00 to 59, with a value of 99 for unknown.

**SAS Name:** MINUTE [A2AZ.]

**Attribute Codes 1988-Later**

x = minute  
99 = unknown

### **A02AI Univariate Imputed Minute of the Crash**

---

**Definition:** This imputed variable has the same definition and element values as *Minute of the Crash*, excluding value 99 for unknown minutes. (See *Understanding the GES Imputation Process* section.)

**SAS Name:** MINUTE\_I [A2AZ.]

## **Variable Definitions and Codes – Accident File**

---

### **A03 Number of Vehicles Involved**

---

**Definition:** The number of vehicles involved in the crash.

**SAS Name:** VEH\_INVL

**Attribute Codes 1988-Later**

x = number of vehicles

### **A03A Number of Vehicles Coded**

---

**Definition:** This variable was derived by counting the number of vehicles listed in the Vehicle data set for a crash. This variable was discontinued in 1990.

**SAS Name:** VEH\_COD

**Attribute Codes 1988-1989**

x = number of vehicles



## **Variable Definitions and Codes – Accident File**

---

### **A03B Number of Persons Involved**

---

**Definition:** The number of persons involved in the crash. The value 0 is coded when there are no persons involved in the crash. For example, if a parked vehicle slips into gear, rolls down a driveway and hits a vehicle parked on the street, the number of persons involved is 0. This variable was discontinued in 1990.

**SAS Name:** PER\_INVL

#### **Attribute Codes 1988-1989**

x = Number of persons  
99 = Unknown

### **A03C Number of Persons Coded**

---

**Definition:** This variable is derived from the number of records in the Person data set for the crash. A value 0 is coded when there are no persons coded in the crash. This number may be less than number of persons involved because some states report only the number of injured occupants, but no further information. This variable was discontinued in 1990.

**SAS Name:** PER\_COD

#### **Attribute Codes 1988-1989**

x = number of persons

## **Variable Definitions and Codes – Accident File**

---

### **A04 Number of Non-Motorists Involved**

---

**Definition:** The number of non-motorists involved in the crash. A non-motorist is defined as a pedestrian, a cyclist, an occupant of a motor vehicle not in transport, a person riding a horse, an occupant of an animal drawn conveyance, person associated with non-motorist conveyance (e.g., baby carriage, skate board, wheelchair), or an other non-motorist (e.g., person outside a trafficway, person in a house).

**SAS Name:** NON\_INVL

#### **Attribute Codes 1988-Later**

Note: From 1988-1998 the range was 0-25 and in 1999 it was changed to 0-98.

x = number of non-motorists

### **A04A Number of Non-Motorists Coded**

---

**Definition:** This variable is derived by counting the number of records for non-motorists in the Person data set for the crash. A value 0 is coded when there were no non-motorists coded in the crash. This variable was discontinued in 1990.

**SAS Name:** NON\_COD

#### **Attribute Codes 1988-1989**

x = number of non-motorists

## **Variable Definitions and Codes – Accident File**

---

### **A05 Land Use**

---

**Definition:** The population of the area associated with the police jurisdiction from which the accident report is selected.

**SAS Name:** LAND\_USE [A5Z.]

#### **Attribute Codes 1988-Later**

- 1 = Within Area of Population 25,000-50,000
- 2 = Within Area of Population 50,000-100,000
- 3 = Within Area of Population 100,000+
- 8 = Other Area
- 9 = Unknown

### **A05A Percentage Rural**

---

**Definition:** This variable was discontinued in 1997.

**SAS Name:** RUR\_URB [A5AZ.]

#### **1988-1996 Coding Attributes**

- 0 = Rural
- 1 = 10 % of Area is Rural
- 2 = 20 % of Area is Rural
- 3 = 30 % of Area is Rural
- 4 = 40 % of Area is Rural
- 5 = 50 % of Area is Rural
- 6 = 60 % of Area is Rural
- 7 = 70 % of Area is Rural
- 8 = 80 % of Area is Rural
- 9 = 90 % of Area is Rural
- 10 = 100 % of Area is Rural

## Variable Definitions and Codes – Accident File

### A06 First Harmful Event

**Definition:** Indicates the first property damaging or injury producing event in the crash.

**SAS Name:** EVENT1 [A6NZ.]

#### Attribute Codes

1988-1991	1992-1998	1999-Later	
		<i>Noncollision</i>	
1	1	1	Rollover/Overturn
2	2	2	Fire/Explosion
3	3	3	Immersion
4		4	Gas Inhalation
5	5	5	Jackknife
6	6	6	Noncollision Injury (Injured In Vehicle Or Fell From Vehicle)
	50	7	Pavement Surface Irregularity (Ruts, Potholes, Grates, etc.)
8	8	8	Other Noncollision
9	9	9	Noncollision-No Details
10	10	10	Thrown or Falling Object
		<i>Collision with Object Not Fixed</i>	
21	21	21	Pedestrian
22	22	22	Cycle or Cyclist (Pedalcyclist or Pedalcycle)
23	23	23	Railway Train
24	24	24	Animal
25	25	25	Motor Vehicle in Transport
26	26	26	Parked Motor Vehicle (or Other M.V. Not in Transport)
27	27	27	Other Type Non-Motorist
28	28	28	Other Object Not Fixed
29	29	29	Object Not Fixed-No Details
		<i>Collision with Fixed Object</i>	
31	31	31	Ground
32	32	32	Building
33	33	33	Impact Attenuator/Crash Cushion
34	34	34	Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
35	35	35	Guardrail
36	36	36	Concrete Traffic Barrier or Other Longitudinal Barrier Type
37	37	37	Post, Pole or Support (Sign Post, Utility Post)
38	38	38	Culvert or Ditch
39	39	39	Curb
40	40	40	Embankment
41	41	41	Fence
42	42	42	Wall
43	43	43	Fire Hydrant
44	44	44	Shrubbery or Bush
45	45	45	Tree
46	46	46	Boulder
48	59	58	Other Fixed Object
49	59	59	Fixed Object, No Details
97			Other – No Details (1988-1989 only)
99	99	99	Unknown

## Variable Definitions and Codes – Accident File

---

### A06I Univariate Imputed First Harmful Event

---

**Definition:** This imputed variable has the same definition as *First Harmful Event*, excluding value 99 for unknown first harmful event. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** EVENT1\_I [A6NZ.]

## Variable Definitions and Codes – Accident File

---

### A07 Manner of Collision

---

**Definition:** Indicates the orientation of the vehicles in a collision. If a non-collision, it is classified as such.

**SAS Name:** MAN\_COL [A7N.]

#### Attribute Codes

##### 1988 –1998    1999-Later

0	0	Not Collision with Motor Vehicle in Transport
1	1	Rear-End
2	2	Head-On
3	3	Rear-to-Rear
4	4	Angle
5	5	Sideswipe, same direction
6	6	Sideswipe, opposite direction
8		Other
9	9	Unknown

### A07I Univariate Imputed Manner of Collision

---

**Definition:** This imputed variable has the same definition and element values as *Manner of Collision*, excluding value "9" for unknown manner of collision. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** MANCOL\_I [A7N.]

## **Variable Definitions and Codes – Accident File**

---

### **A08 Interstate Highway**

---

**Definition:** Indicates whether or not the crash occurred on an interstate highway. Interstate highway is a Federal Highway Administration classification.

**SAS Name:** INT\_HWY [A8Z.]

#### **Attribute Codes 1988-Later**

0 = No

1 = Yes

9 = Unknown.

## Variable Definitions and Codes – Accident File

---

### A09 Relation to Junction

---

**Definition:** Indicates if the first harmful event is located within a junction or interchange area. If the first harmful event occurs off the roadway, the location classified is the point of departure. In 1992, this variable was modified into two categories: *Non-Interchange Area* and *Interchange Area*.

**SAS Name:** REL\_JCT [A9N.]

#### Attribute Codes

##### 1988-1991

0 = Non-Junction  
1 = Intersection  
2 = Intersection Related  
3 = Interchange Area  
4 = Driveway, Alley Access, Etc.  
5 = Entrance/Exit Ramp  
6 = Rail Grade Crossing  
8 = Other  
9 = Unknown

##### 1992-1994 1995-1998 1999-Later

			<i>Non-interchange Area</i>
0	0	0	Non-Junction
1	1	1	Intersection
2	2	2	Intersection Related
3	3	3	Driveway, Alley Access, Etc.
4	4	4	Entrance/Exit Ramp
5	5	5	Rail Grade Crossing
	6	6	On A Bridge
		7	Crossover Related
8	8	8	Other, Non-interchange
9	9	9	Unknown, Non-interchange
			<i>Interchange Area</i>
10	10	10	Non-Junction
11	11	11	Intersection
12	12	12	Intersection Related
13	13	13	Driveway, Alley Access, Etc.
14	14	14	Entrance/Exit Ramp
	16	16	On A Bridge
		17	Crossover Related
18	18	18	Other Location in Interchange
19	19	19	Unknown, Interchange Area
99	99	99	Unknown if Interchange



## **Variable Definitions and Codes – Accident File**

---

### **A09I Univariate Imputed Relation to Junction**

---

**Definition:** This imputed variable has the same definition and element values as *Relation to Junction*, excluding value 9, 19, 99 for unknown relation to junction. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** RELJCT\_I [A9N.]

## Variable Definitions and Codes – Accident File

---

### A10 Relation to Roadway

---

**Definition:** Indicates the location of the first harmful event.

**SAS Name:** REL\_RWY [A10N.]

#### Attribute Codes

1988-1998	1999-2001	2002-Later
1 = On Roadway	1	1 On Roadway
2 = On Shoulder or Parking Lane	2	2 On Shoulder
3 = Off Roadway/Shoulder/Parking Lane	3	3 On Median
4 = On Median	4	4 On Roadside
	5	5 Outside Trafficway
	6	6 Off Roadway-Location Unknown
	7	7 In Parking Lane
8 = Other	8	8 Gore
		9 Continuous Left Turn Lane
	10	10 Separator
9 = Unknown	99	99 Unknown

## Variable Definitions and Codes – Accident File

---

### A11 Trafficway Flow

---

**Definition:** Indicates whether or not the roadway was divided.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VTRAFWAY is in the Vehicle data set

**SAS Name:** TRAF\_WAY [A11Z.]

#### Attribute Codes

##### 1988-2002    2003-Later

	0 = Not Physically Divided (Center 2-way Left Turn Lane)
1	1 = Not Physically Divided (Two Way Trafficway)
2	2 = Divided Highway (Median Strip, Barrier)
3	3 = One Way Trafficway
9	9 = Unknown

## **Variable Definitions and Codes – Accident File**

---

### **A12 Number of Travel Lanes**

---

**Definition:** Indicates the number of lanes of travel. If the roadway is a divided trafficway, the number of travel lanes counts only lanes in the direction of travel of the first harmful event. If the roadway is an undivided trafficway, the number of travel lanes are all the lanes regardless of their direction of travel.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VNUM\_LAN is in the Vehicle data set.

**SAS Name: NUM\_LAN [A12Z.]**

#### **Attribute Codes 1988-Later**

- 1 = One Lane
- 2 = Two Lanes
- 3 = Three Lanes
- 4 = Four Lanes
- 5 = Five Lanes
- 6 = Six Lanes
- 7 = Seven or More Lanes
- 9 = Unknown

## Variable Definitions and Codes – Accident File

---

### A13 Roadway Alignment

---

**Definition:** Horizontal alignment of roadway.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VALIGN is in the Vehicle data set.

**SAS Name:** ALIGN [A13Z.]

**Attribute Codes 1988-Later**

1 = Straight  
2 = Curve  
9 = Unknown

### A13I Univariate Imputed Roadway Alignment

---

**Definition:** This imputed variable has the same definition and element values as **Roadway Alignment**, excluding value "9" for unknown roadway alignment. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** ALIGN\_I [A13Z.]

## Variable Definitions and Codes – Accident File

---

### A14 Roadway Profile

---

**Definition:** Vertical alignment of roadway.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VPROFILE is in the Vehicle data set.

**SAS Name:** PROFILE [A14Z.]

#### Attribute Codes

1988-2001	2002-Later
1 = Level	1=Level
2 = Grade	2=Grade
3 = Hillcrest	3=Hillcrest
8 = Other	8=Sag
9 = Unknown	9=Unknown

### A14I Univariate Imputed Roadway Profile

---

**Definition:** This imputed variable has the same as definition and element values as *Roadway Profile*, excluding value "9" for unknown roadway profile. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** PROFIL\_I [A14Z.]

## **Variable Definitions and Codes – Accident File**

---

### **A15 Roadway Surface Condition**

---

**Definition:** Condition of road surface at the time of the crash.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the trafficway coded is based on the roadway surface type and number of travel lanes of the trafficways involved and a determination of which vehicle contributed most the cause of the crash.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSURCOND is in the Vehicle data set.

**SAS Name: SUR\_COND [A15Z.]**

#### **Attribute Codes 1988-Later**

- 1 = Dry
- 2 = Wet
- 3 = Snow or Slush
- 4 = Ice
- 5 = Sand, Dirt, Oil
- 8 = Other
- 9 = Unknown

### **A15I Univariate Imputed Roadway Surface Condition**

---

**Definition:** This imputed variable has the same definition and element values as **Roadway Surface Condition**, excluding value "9" for unknown roadway surface condition. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name: SURCON\_I [A15Z.]**

## Variable Definitions and Codes – Accident File

### A16 Traffic Control Device

**Definition:** Indicates whether or not a traffic control device was present for the crash and the type of traffic control device.

If the crash involves vehicles and cyclists subject to different traffic control devices, the device coded is based on the following priority:

- 51 - Officer, Crossing Guard, Flagman, etc
- The lowest numbered device shown below
- 0 - No traffic control device.

From 2002 onward this information is also available on the Vehicle data set (VTRAFCON), the Biketraf data set (BTRAFCON) and the Trafcon data set (MTRAFCON).

**SAS Name: TRAF\_CON [A16N.]**

#### Attribute Codes:

##### 1988-1989

0 = No Controls

*Not at Railroad Grade Crossing*

*Traffic Signals:*

- 1 = Traffic Control Signal (on colors) w/o Pedes. Signal
- 2 = Traffic Control Signal (on colors) w/ Pedes. Signal
- 3 = Traffic Control Signal (on colors) Pedes. Signal Not Known
- 4 = Flashing Traffic Control Signal or Flashing Beacon

- 8 = Other Traffic Signal
- 9 = Unknown Traffic Signal

*Regulatory, School Zone or Warning Signs:*

- 11 = Stop Sign
- 12 = Yield Sign
- 13 = School Zone Related Sign
- 14 = Warning Sign
- 18 = Other Sign
- 19 = Unknown Sign

*Miscellaneous not at Railroad Crossing:*

21 = Officer, Crossing Guard, Flagman, etc

*At Railroad Grade Crossing:*

- 31 = Active Devices (e.g. Gates, Flashing Lights, Traffic Signal)
- 32 = Passive Devices (Stop Sign, Cross Bucks)

*Other:*

- 97 = Traffic Control Present-No Details
- 98 = Other Traffic Control (whether or not at RR Grade Crossing)
- 99 = Unknown

##### 1990-Later

0 = No Controls

*Not at Railroad Grade Crossing*

*Trafficway Traffic Signals:*

- 1 = Traffic Control Signal (on colors)

4 = Flashing Traffic Control Signal or Flashing Beacon

- 8 = Other Traffic Signal
- 9 = Unknown Traffic Signal

*Regulatory, School Zone Signs:*

- 21 = Stop Sign
- 22 = Yield Sign
- 23 = School Zone Related Sign

- 28 = Other Sign
- 29 = Unknown Sign

*Warning Signs:*

- 40 = Advisory Speed Sign
- 41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
- 42 = Warning Sign For Road Construction
- 43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
- 49 = Unknown Type Warning

*Miscellaneous, Not at Railroad Crossing:*

51 = Officer, Crossing Guard, Flagman, etc

*At Railroad Grade Crossing:*

- 61 = Active Devices (e.g. Gates, Flashing Lights, Traffic Signal)
- 62 = Passive Devices (Stop Sign, Cross Bucks)

*Other:*

- 97 = Traffic Control Present-No Details
- 98 = Other Traffic Control (whether or not at RR Grade Crossing)
- 99 = Unknown



## **Variable Definitions and Codes – Accident File**

---

### **A17 Traffic Device Functioning**

---

**Definition:** Indicates whether or not the traffic control device was functioning. This variable was discontinued in 1990.

**SAS Name:** DEV\_FUNC [A17Z.]

#### **Attribute Codes 1988-1989**

0 = No Controls  
1 = Device Not Functioning  
2 = Device Functioning  
9 = Unknown

## Variable Definitions and Codes – Accident File

---

### A18 Speed Limit

---

**Definition:** Posted speed limit in miles per hour.

If the crash involves vehicles traveling on different trafficways (e.g., first harmful event occurred in an intersection), the highest speed limit is coded.

Starting in 2002 this information is also available for each vehicle in a crash. The variable VSPD\_LIM is in the Vehicle data set.

**SAS Name:** SPD\_LIM [A18Z.]

#### Attribute Codes 1988-Later

- 0 = No Statutory Limit (parking lot, alley, etc.)
- 5-75 = (Actual Speed Limit)
- 99 = Unknown

### A18H Hot-deck Imputed Speed Limit

---

**Definition:** This imputed variable has the element values as **Speed Limit**, excluding value "99" for unknown speed limit. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name:** SPDLIM\_H [A18Z.]

## Variable Definitions and Codes – Accident File

---

### A19 Light Condition

---

**Definition:** General light conditions at the time of the crash, including light from external roadway illumination fixtures.

**SAS Name:** LGHT\_CON [A19N.]

#### Attribute Codes

1988-1998	1999-Later	
1	1	= Daylight
2	2	= Dark
3	3	= Dark but Lighted
4	4	= Dawn
5	5	= Dusk
6		= Dawn or Dusk
9	9	= Unknown

### A19I Univariate Imputed Light Condition

---

**Definition:** This imputed variable has the same definition and element values as **Light Condition**, excluding value "9" for unknown light condition. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name:** LGTCON\_I [A19N.]

## **Variable Definitions and Codes – Accident File**

---

### **A20 Atmospheric Conditions**

---

**Definition:** General atmospheric conditions at the time of crash.

**SAS Name:** WEATHER [A20Z.]

#### **Attribute Codes 1988-Later**

1 = No Adverse Conditions

2 = Rain

3 = Sleet

4 = Snow

5 = Fog

6 = Rain and Fog

7 = Sleet and Fog

8 = Other (Smog, Smoke, Blowing Sand/Dust/Snow, Crosswind, Hail)

9 = Unknown

### **A20I Univariate Imputed Atmospheric Condition**

---

**Definition:** This imputed variable has the same definition and element values as **Atmospheric Conditions**, excluding value "9" for unknown atmospheric conditions. (See ***Understanding the GES Imputation Process*** section of this manual.)

**SAS Name:** WEATHR\_I [A20Z.]

## **Variable Definitions and Codes – Accident File**

---

### **A21 School Bus-Related**

---

**Definition:** Indicates if a school bus is related to the crash. The number of school bus related crashes may not equal the number of crashes with school buses involved. For example, if a vehicle goes around a stopped school bus and hits a pedestrian, the school bus usually will not be coded, but the crash is school bus related.

**SAS Name:** SCHL\_BUS [A21Z.]

#### **Attribute Codes 1988-Later**

0 = No

1 = Yes

## Variable Definitions and Codes – Accident File

---

### A23 Stratum

---

**Definition:** The number of the category in which the PAR was originally listed in GES PAR Program or Stratification Record. See the report section “GES Sample Design” for more information. This variable is on all GES SAS data sets.

**SAS Name: STRATUM [A23Z.]**

#### Attribute Codes

##### 1988-2001

- 1 = Group 1: NASS crashes involving at least one passenger vehicle, i.e., a passenger car, sport utility vehicle, pickup truck or van) towed due to damage from the crash scene and no medium or heavy trucks are involved.
- 2 = Group 2: NASS crashes not qualifying for *Group 1* involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.
- 3 = Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.
- 4 = Group 4: NASS crashes not qualifying for *Group 1, 2 or 3*. No one in the crash can receive a K, A, or B injury.

##### 2002-Later

- 1 = Group 1L: NASS crashes where an occupant of a towed passenger vehicle is killed. This category also includes crashes where an occupant of a towed passenger vehicle received an incapacitating injury and is transported for treatment. If the crash involves two or more passenger vehicles, at least two passenger vehicles must be towed and at least one of the occupants of a towed passenger vehicle must receive an incapacitating injury and be transported for treatment. No medium or heavy trucks may be involved
- 2 = Group 2: NASS crashes not qualifying for *Group 1* involving at least one medium or heavy truck in which a vehicle was towed due to damage or at least one involved person had a police-reported injury of K, A, B, or C.
- 3 = Group 3: NASS crashes not qualifying for *Group 1 or 2* in which none of the vehicles involved in the crash was a medium or heavy truck and at least one person involved in the crash had a police-reported injury of K, A, or B.
- 4 = Group 4: NASS crashes not qualifying for *Group 1, 2 or 3*. No one in the crash can receive a K, A, or B injury.
- 5 = Group 1M: NASS crashes not qualifying for Group 1L, but at least one occupant of a towed passenger vehicle is injured and transported for treatment. No medium or heavy trucks may be involved.
- 6 = Group 1N: NASS crashes not qualifying for Group 1L or Group 1M, but a passenger vehicle is towed and no medium or heavy trucks are involved.

### A24 Pedestrian/Cyclist Crash Type

---

**Definition:** Information to code this variable is obtained from the police narrative. The values 1 through 99 pertain to cyclist crash types and 110 through 920 pertain to pedestrian crash types. Starting in 1989, four-digit codes are added pertaining to wheelchair involved crash types. The codes are similar to the 110-920 codes for pedestrians, with a 1 added as the first-digit. For example, 1110 is wheelchair involved with a commercial bus.

The crash types are prioritized. The lower category number has the higher the priority. For example, if after examining the PAR the cyclist crash could be classified as either a 3 or 13, the Crash Type would be classified as a 3.

**SAS Name: PED\_ACC [A24Z.]**

#### Attribute Codes 1988-Later

0 = No pedestrian/cyclist involved

##### *Bicyclist Rides out from a Driveway, Alley, or Other Mid-block Location*

- 1 = Cyclist fails to yield to motorist at a residential driveway or alley; pre-crash path perpendicular to roadway.
- 2 = Cyclist fails to yield to motorist at a commercial driveway or alley; pre-crash path perpendicular to roadway.
- 3 = Cyclist turns or merges into the path of motorist from a residential driveway or alley; pre-crash path parallel to roadway.
- 4 = Cyclist fails to yield to motorist at a mid-block location: entry is over curb or shoulder.

##### *Bicyclist Rides out from a Controlled Intersection*

- 5 = Cyclist fails to yield to motorist at an intersection controlled by a stop sign or a flashing red signal.
- 6 = Cyclist fails to clear intersection controlled by signal before light turns green for cross traffic; motorists' view of cyclist was not obstructed.
- 7 = Cyclist fails to clear intersection controlled by signal before light turns green for cross traffic; motorists' view of cyclist was obstructed by standing traffic.

##### *Motorist Turns or Drives out in Front of Bicyclist*

- 8 = Motorist exiting from driveway, alley, or other mid-block location fails to yield to cyclist.
- 9 = At an intersection controlled by a stop sign or flashing red light, motorist obeys the sign but fails to yield to cyclist.
- 10 = At an intersection controlled by a signal, motorist obeys signal but fails to yield to cyclist while making right turn on red.
- 11 = Motorist backing from driveway fails to yield to cyclist.
- 12 = Motorist fails to stop at an intersection controlled by a stop sign.

##### *Motorist Overtakes Bicyclist*

- 13 = Motorist fails to detect cyclist he/she is overtaking.
- 14 = Motorist loses control of vehicle while overtaking cyclist; in some cases motorist is in uncontrolled slide or spin, but more often, merely loses precise control and veers too far to right.
- 15 = The motorist and the cyclist counteract each other's evasive action.
- 16 = Motorist misjudges space required to pass cyclist.
- 17 = Cyclist's path is obstructed, causing cyclist to strike obstruction or overtaking motorist.

##### *Bicyclist Makes Unexpected Turn or Swerve*

- 18 = Cyclist turns left in front of motorist proceeding in the same direction.
- 19 = Cyclist turns left in front of motorist approaching from straight ahead.
- 20 = Cyclist loses control and swerves into the path of a motorist proceeding in the same direction.
- 21 = Cyclist riding on wrong side of street makes right turn in path of approaching motorist.

## Variable Definitions and Codes – Accident File

### *Motorist Makes Unexpected Turn*

22 = Motorist make left turn in front of cyclist proceeding in the same direction; in some cases cyclist was riding on wrong side of street.

23 = Motorist make left turn in front of cyclist approaching from straight ahead.

24 = Motorist makes right turn in front of cyclist proceeding in a parallel path; bicyclist either proceeding in same direction or from opposite direction (riding on the wrong side of the street).

### *Other/Infrequent*

25 = Vehicles collide at uncontrolled intersection: crossing paths

26 = Vehicles collide head-on: wrong-way bicyclist

27 = Bicyclist overtaking motor vehicle

28 = Vehicles collide head-on; wrong-way motorist

29 = Parking lot, other open area: crossing paths

30 = Vehicles collide head-on: counteractive evasive action

31 = Bicyclist cuts corner when turning left: crossing paths

32 = Bicyclist swings wide when turning right: crossing paths

33 = Motorist cuts corner when turning left: crossing paths

34 = Motorist swings wide when turning right: crossing paths

35 = Motorist drives out from on-street parking

36 = Weird (e.g. motorist/cyclist intentionally causes crash, or cyclist struck by falling cargo)

39 = Motorist overtaking Cyclist (other than elements 13-17)

40 = Play vehicle (Big wheel, other tricycle, or bicyclist with training wheels)

41 = Cyclist struck parked vehicle

48 = Drive out-Intersection (Motorist drove out into or in front of cyclist)

49 = Ride out-intersection (Bicyclist)

55 = Controlled intersection-other

97 = Unknown if approach paths are parallel or crossing\* (added in 1989)

98 = Parallel path-unknown

99 = Intersecting path-unknown

<i>Pedestrian</i>	<i>Wheel Chair</i>	<i>Crash Types</i>
110	1110	Commercial Bus
120	1120	School Bus
130	1130	Ice Cream Vendor
140	1140	Mailbox Related
150	1150	Entering/Exiting
210	1210	Driverless Vehicle
220	1220	Backing Vehicle
230	1230	Hot Pursuit
310	1310	To/from Disabled Vehicle
320	1320	Disabled Vehicle Related
330	1330	Emergency Vehicle Related
410	1410	Working on Roadway
420	1420	Play Vehicle-Related
430	1430	Playing in Roadway
510	1550	Hitchhiking
520	1520	Expressway Crossing
531	1531	Walking along Roadway with Traffic
532	1532	Walking along Roadway against Traffic
539	1539	Walking along Roadway Can't Specify
610	1610	Waiting to Cross At or Near Curb
620	1620	Pedestrian / Wheel Chair Not in Roadway
710	1710	Multiple Threat, Intersection
720	1720	Vehicle Turn/Merge
730	1730	Intersection Dash
740	1740	Trapped
750	1750	Pedestrian Walked /Wheel Chair Rolled into Vehicle, Intersection
760	1760	Intersection, Driver Violation
790	1790	Intersection-other
810	1810	Multiple Threat, Mid-block
821	1821	Mid-block Dart-out, First half



## Variable Definitions and Codes – Accident File

---

822	1822	Mid-block Dart-out, Second half
829	1829	Mid-block Dart-out, Can't specify
830	1830	Mid-block dash
840	1840	Pedestrian Walked / Wheel Chair Rolled into Vehicle, Mid-block
890	1890	Mid-block-other
910	1910	Other-weird
920	1920	Inadequate information

## **Variable Definitions and Codes – Accident File**

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### **A25 Work Zone**

---

**Definition:** From 1995 to 2003 this variable indicated whether the first harmful event occurred in a construction area or work zone. In 2004 it was expanded to identify first harmful events that were related to, but did not necessarily occur in, a construction or work zone.

**SAS Name:** WRK\_ZONE [A25Z.]

#### **Attribute Codes:**

##### **1995-2003**

0 = No

1 = Yes, first harmful event in a construction or work zone

##### **2004**

3 = No

4 = Yes, first harmful event in work or construction zone

5 = Yes, first harmful event related to, but not in, work or construction zone

6 = Yes, first harmful event is in or is related to a work or construction zone, but it is not known which

9 = Unknown

## **Variable Definitions and Codes – Accident File**

---

### **A26 National Highway System (NHS) Roadway Type**

---

**Definition:** This variable was added to indicate whether this roadway is designated as part of the National Highway System and the urban or rural character of the area through which the roadway travels. This variable was added to the accident data set in 1995 and removed in 1999.

**SAS Name: NHS\_RWTP [A26Z.]**

#### **Attribute Codes 1995-1998**

00 = Not NHS Roadway

##### *Urban*

- 1 = Eisenhower Interstate (EIS)
- 2 = Congressional High Priority Route
- 3 = STRAHNET Route
- 4 = STRAHNET Major Connector
- 5 = Other NHS Route
- 9 = Unknown Urban Route

##### *Rural*

- 11 = Eisenhower Interstate (EIS)
- 12 = Congressional High Priority Route
- 13 = STRAHNET Route
- 14 = STRAHNET Major Connector
- 15 = Other NHS Route
- 19 = Unknown Urban Route

##### *Urban or Rural*

- 21 = Eisenhower Interstate (EIS)
- 22 = Congressional High Priority Route
- 23 = STRAHNET Route
- 24 = STRAHNET Major Connector
- 25 = Other NHS Route
- 98 = Unknown if Urban or Rural
- 99 = Unknown if NHS Route

## **Variable Definitions and Codes – Accident File**

---

### **A90 Maximum Injury Severity in Crash**

---

**Definition:** Indicates the most severe injury of all persons involved in the crash, and is derived from the injury severity variable in the Person data set. The following order of severity has been used since 2001.

- 4-Fatal*
- 3- Incapacitating*
- 2-Non- incapacitating*
- 1-Possible Injury*
- 5-Injured, Unknown Severity*
- 0-No Injury*
- 6-Died Prior*
- 9-Unknown if Injured*
- 8-No Person Involved in the Crash*

From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

**SAS Name: MAX\_SEV [A90Z.]**

#### **Attribute Codes 1988-Later**

- 0 = No Injury
- 1 = Possible Injury
- 2 = Non-incapacitating
- 3 = Incapacitating
- 4 = Fatal
- 5 = Unknown Injury Severity
- 6 = Died Prior
- 8 = No Person Involved in the Crash
- 9 = Unknown

### **A90I Univariate Imputed Maximum Injury Severity in Crash**

---

**Definition:** This imputed variable has the same definition and element values as **Maximum Injury Severity in Crash**, excluding value "9" for unknown maximum injury severity. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name: MAXSEV\_I [A90Z.]**

## **Variable Definitions and Codes – Accident File**

---

### **A91 Number Known Injured in Crash**

---

**Definition:** Derived by counting all the persons with an injury severity of (1, 2, 3, 4, 5, or 9) in a crash.

**SAS Name:** NUM\_INJ [A91N.]

#### **Attribute Codes 1988-Later**

0 = No Person Injured/Property Damage Only Crash  
x = Number of Known Injured  
98 = No Person Involved in the Crash  
99 = All Persons in Crash are Unknown If Injured.

### **A91I Imputed Number Known Injured in Crash**

---

**Definition:** This imputed variable was derived from the hot-deck injury severity variable in the Person data set. This variable has the same definition and element values as ***Number Known Injured in Crash***, excluding values 98 and 99 for no person involved and unknown number injured, respectively.

**SAS Name:** NO\_INJ\_I [A91N.]

## **Variable Definitions and Codes – Accident File**

---

### **A92 Alcohol Involved in Crash**

---

**Definition:** This is a derived variable based on police-reported alcohol involvement from the Person data set. This variable indicates alcohol use for drivers, pedestrians, cyclists and other type of non-motorists (except occupants of motor vehicles not in transport) involved in the crash.

**SAS Name: ALCOHOL [A92Z.]**

#### **Attribute Codes 1988-Later**

1 = Alcohol Involved

2 = No Alcohol Involved

8 = No Applicable Person Involved in the Crash (The crash involved only passengers of in-transport motor vehicles, occupants of motor vehicles not in transport or unknown occupant types who are in an in-transport motor vehicle)

9 = Unknown

### **A92I Imputed Alcohol Involved in Crash**

---

**Definition:** This variable has the same definition and element values as ***Alcohol Involved in Crash***, excluding element value 9 for unknown alcohol involvement, and the attribute code 8 was converted to attribute code 2. This imputed variable was derived from the hot-deck imputed police reported alcohol involvement on the Person data set.

**SAS Name: ALCHL\_I [A92Z.]**

## **Variable Definitions and Codes – Event File**

---

### **The Event Data Set**

The Event data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, and PJ. CASENUM may be used to merge with crashes in the Accident data set. It also contains:

#### **E01 Crash Event Sequence Number**

---

**Definition:** Number assigned to each harmful event in a crash, in chronological order.

**SAS Name:** EVENTNUM

**Attribute Codes 2000-Later**

x = Event Number

#### **E02 Vehicle Number-This vehicle**

---

**Definition:** Number assigned to an in transport motor vehicle involved in the event. This variable is the same as VEHNO in the Vehicle data set.

**SAS Name:** VEHNUM

**Attribute Codes 2000-Later**

x = Vehicle Number

## **Variable Definitions and Codes – Event File**

---

### **E03    General Area of Damage-This vehicle**

---

**Definition:** Indicates the impact point that produced property damage or personal injury for this transport motor vehicle involved in the event.

**SAS Name: GAD [E3Z.]**

#### **Attribute Codes 2000-Later**

- 0 = Non-Collision
- 1 = Front
- 2 = Right Side
- 3 = Left Side
- 4 = Back
- 5 = Top
- 6 = Undercarriage
- 11 = Front Right Corner
- 12 = Front Left Corner
- 13 = Back Right Corner
- 14 = Back Left Corner
- 99 = Point of Impact Unknown



## Variable Definitions and Codes – Event File

---

### **E04    Vehicle Number-Other Vehicle or Object Contacted**

---

**Definition:** vehicle number of the other vehicle or object hit, or the type of non-collision involved in the event.

**SAS Name: OBJCONT [E4Z.]**

#### **Attribute Codes 2000-Later**

*Collision with Motor Vehicle in Transport:*  
1-100    Vehicle Number of Other Vehicle

##### *Noncollision*

- 101 Rollover/Overturn
- 102 Fire/Explosion
- 103 Immersion
- 104 Gas Inhalation
- 105 Jackknife
- 106 Noncollision Injury (Injured in Vehicle, or Fell From Veh.)
- 107 Pavement Surface Irregularity (Ruts, Potholes, Grates,etc.)
- 108 Other Noncollision
- 109 Noncollision-No Details
- 110 Thrown or Falling Object

##### *Collision with Object Not Fixed*

- 121 Pedestrian
- 122 Cycle or Cyclist (Pedalcyclist or Pedalcycle)
- 123 Railway Train
- 124 Animal
- 126 Parked Motor Vehicle (or Other M.V. Not in Transport)
- 127 Other Type Non-Motorist
- 128 Other Object Not Fixed
- 129 Object Not Fixed-No Details

##### *Collision with Fixed Object*

- 131 Ground
- 132 Building
- 133 Impact Attenuator/Crash Cushion
- 134 Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
- 135 Guardrail
- 136 Concrete Traffic Barrier or Other Longitudinal Barrier Type
- 137 Post, Pole or Support (Sign Post, Utility Post)
- 138 Culvert or Ditch
- 139 Curb
- 140 Embankment
- 141 Fence
- 142 Wall
- 143 Fire Hydrant
- 144 Shrubbery or Bush
- 145 Tree
- 146 Boulder
- 158 Other Fixed Object
- 159 Fixed Object-No Details

##### *Unknown*

- 999 Unknown

## Variable Definitions and Codes – Event File

---

### E05 General Area of Damage-Other Vehicle

---

**Definition:** Indicates the impact point for the other in transport motor vehicle involved in the harmful event.

**SAS Name:** OBJGAD [E5Z.]

#### Attribute Codes

##### 2000 2001-Later

1	1	= Front
2	2	= Right Side
3	3	= Left Side
4	4	= Back
5	5	= Top
6	6	= Undercarriage
11	11	= Front Right Corner
12	12	= Front Left Corner
13	13	= Back Right Corner
14	14	= Back Left Corner
	98	= Not a Motor Vehicle in Transport
99	99	= Point of Impact Unknown

## **Variable Definitions and Codes – Event File**

---

### **E06 Vehicle's Action**

---

**Definition:** Describes the action for the event for the vehicle identified by VEHNUM.

**SAS Name:** E\_ACTION [E6Z.]

#### **Attribute Codes**

##### **2002-Later**

- 1 = Non-Collision
- 2 = Collision With Object Not Fixed
- 3 = Collision With Fixed Object
- 4 = Strike Another In-Transport Motor Vehicle
- 5 = Struck By An In-Transport Motor Vehicle

### The Vehicle Data Set

The Vehicle data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. It also contains:

#### V02 Hit and Run

---

**Definition:** Hit and run is coded when a motor vehicle in-transport, or its driver, departs from the scene; vehicles not in transport are excluded. It does not matter whether the hit-and-run vehicle was striking or struck.

**SAS Name:** HIT\_RUN [V2Z.]

#### Attribute Codes 1988-Later

0 = No, Did Not Leave Scene

1 = Yes, Driver or Car and Driver Left Scene

9 = Unknown

#### V02I Univariate Imputed Hit and Run

---

**Definition:** This imputed variable has the same definition and element values as *Hit and Run*, excluding value "9" for unknown hit and run. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** HITRUN\_I [V2Z.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V03 Vehicle Make**

---

**Definition:** A numerical code indicating the make of each motor vehicle in transport.

**SAS Name:** MAKE [V3Z.]

**Attribute Codes 1988-Later**

See Appendix A for make and model codes.

### **V04 Vehicle Model**

---

**Definition:** A numerical code indicating the model of each motor vehicle in transport

**SAS Name:** MODEL

**Attribute Codes 1988-Later**

See Appendix A for make and model codes.

## Variable Definitions and Codes – Vehicle File

---

### V05 Body Type

---

Changes to this variable were made in:

1990: Attribute codes 11 and 12 were modified, attribute codes 13 *Limousine* and 22 *Step Van or Walk-in Van* were added, and attribute codes 33, 34, and 47 were deleted.

1992: Attribute codes 11, 12, 13, 14, 20, 21, 30, 31, 60, and 65 were modified. Attribute codes 15, 16, 17, 19, 23, 33, 45, and 64 were added. Some of the existing attribute coding changed.

1993: Attribute codes 24 and 25 were added. Prior to 1993 GVWR was measured in kilograms; in 1993 it changed to pounds.

1999: Attribute 17 was added.

The attribute coding for various years follows.

#### SAS Name: BODY\_TYP [V5N.]

#### Attribute Codes 1988-1989

##### *Automobiles*

- 01 = Convertible (excludes sun-roof, t-bar)
- 02 = 2-door sedan, hardtop, coupe
- 03 = 3-door/2-door hatchback
- 04 = 4-door sedan, hardtop
- 05 = 5-door/4-door hatchback
- 06 = Station wagon (excluding van and truck based)
- 07 = Hatchback, number of doors unknown
- 08 = Other automobile type
- 09 = Unknown automobile type

##### *Automobile Derivatives*

- 10 = Auto based pickup (included El Camino, Caballero, Ranchero, and Brat)
- 11 = Auto based panel (Cargo Station Wagon, auto-based ambulance/hearse)
- 12 = Large limousine (More than four side doors or stretched chassis)

##### *Utility Vehicles*

- 14 = Utility-(includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

##### *Van-Based Light Trucks ( $\leq 10,000$ lbs GVWR)*

- 20 = Minivan (Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)
- 21 = Standard Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Mini Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)
- 28 = Other Van Type
- 29 = Unknown Van type

##### *Light Conventional Trucks (Pickup style cab, $\leq 10,000$ lbs GVWR)*

- 30 = Compact Pickup (< 4,500 lbs GVWR, S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)
- 31 = Standard Pickup (4,500 to 10,000 lbs GVWR, C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)
- 32 = Pickup with slide-in camper
- 33 = Truck based station wagon (4-door; includes Suburban, Travelall, Wagoneer)

## Variable Definitions and Codes – Vehicle File

---

34 = Light truck based suburban limousine  
39 = Unknown (pickup style) light conventional truck

### *Other Light Trucks (< 10,000 lbs GVWR)*

40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)  
41 = Truck based panel  
42 = Light truck based motor home (chassis mounted)  
47 = Other light conventional truck type (not a pickup)  
48 = Unknown other light truck type (utility, van, pickup, or other light truck)  
49 = Unknown light vehicle type (automobile, van, or light truck)

### *Buses (excludes van based)*

50 = School bus type (designed to carry students, not cross country or transit)  
58 = Other bus (e.g., transit, intercity, bus based motor home)  
59 = Unknown bus type

### *Medium/Heavy Trucks (>10,000 lbs GVWR)*

60 = Single unit straight truck  
63 = Medium/heavy truck based motor home  
65 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)  
68 = Unknown medium/heavy truck type  
69 = Unknown truck type (light/medium/heavy)

### *Motored Cycles (Does not include all terrain vehicles/cycles)*

70 = Motorcycle  
71 = Moped (motorized bicycle)  
72 = Three wheeled motorcycle or moped  
78 = Other motored cycle type (minibike, motor scooter)  
79 = Unknown motored cycle type

### *Other Vehicles*

80 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)  
81 = Snowmobile  
82 = Farm equipment other than trucks  
83 = Construction equipment other than trucks (includes graders)  
88 = Other type vehicle (includes go-cart, fork lift, city street sweeper)  
89 = Unknown other vehicle  
99 = Unknown body type

## Attribute Codes 1990-1991

### *Automobiles*

01 = Convertible (excludes sun-roof, t-bar)  
02 = 2-door sedan, hardtop, coupe  
03 = 3-door/2-door hatchback  
04 = 4-door sedan, hardtop  
05 = 5-door/4-door hatchback  
06 = Station wagon (excluding van and truck based)  
07 = Hatchback, number of doors unknown  
08 = Other automobile type  
09 = Unknown automobile type

### *Automobile Derivatives*

10 = Auto based pickup (included El Camino, Caballero, Ranchero, and Brat)  
11 = Ambulance  
12 = Hearse  
13 = Limousine

## Variable Definitions and Codes – Vehicle File

---

### *Utility Vehicles*

14 = Utility-(includes Jeep CJ-2-CJ7, Renegade, Landrover, Bronco, Landcruiser, Thing, Blazer, Bronco II, Jimmy, Ramcharger, Cherokee, Trailduster, Scout)

### *Van-Based Light Trucks ( $\leq 10,000$ lbs GVWR)*

20 = Minivan (Astro, Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi)

21 = Large Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, Ram Wagon, Vandura, Rally Voyager, Beauville, Sportsman)

22 = Step Van or Walk-in Van ( $< 10,000$  lbs GVWR)

28 = Other Van Type

29 = Unknown Van type

### *Light Conventional Trucks (Pickup style cab, $\leq 10,000$ lbs GVWR)*

30 = Compact pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup)

31 = Standard pickup (C10-C30, K10-K30, T10, D100-D300, W150, F100-F350, Comanche, J10, J20)

32 = Pickup with slide-in camper

39 = Unknown (pickup style) light conventional truck

### *Other Light Trucks ( $< 10,000$ lbs GVWR)*

40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)

41 = Truck based panel

42 = Light truck based motor home (chassis mounted)

48 = Unknown other light truck type (utility, van, pickup, or other light truck)

49 = Unknown light vehicle type (automobile, van, or light truck)

### *Buses (excludes van based)*

50 = School bus type (designed to carry students, not cross country or transit)

58 = Other bus (e.g., transit, intercity, bus based motor home)

59 = Unknown bus type

### *Medium/Heavy Trucks ( $>10,000$ lbs GVWR)*

60 = Single unit straight truck

63 = Medium/heavy truck based motor home

65 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)

68 = Unknown medium/heavy truck type

69 = Unknown truck type (light/medium/heavy)

### *Motored Cycles (Does not include all terrain vehicles/cycles)*

70 = Motorcycle

71 = Moped (motorized bicycle)

72 = Three wheeled motorcycle or moped

78 = Other motored cycle type (minibike, motor scooter)

79 = Unknown motored cycle type

### *Other Vehicles*

80 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)

81 = Snowmobile

82 = Farm equipment other than trucks

83 = Construction equipment other than trucks (includes graders)

88 = Other type vehicle (includes go-cart, fork lift, city street sweeper)

89 = Unknown other vehicle

99 = Unknown body type



## Variable Definitions and Codes – Vehicle File

---

### Attribute Codes 1992-Later

#### *Automobiles*

- 01 = Convertible (excludes sun-roof, t-bar)
- 02 = 2-door sedan, hardtop, coupe
- 03 = 3-door/2-door hatchback
- 04 = 4-door sedan, hardtop
- 05 = 5-door/4-door hatchback
- 06 = Station wagon (excluding van and truck based)
- 07 = Hatchback, number of doors unknown
- 17 = 3-Door Coupe (*added in 1999*)
- 08 = Other automobile type
- 09 = Unknown automobile type

#### *Automobile Derivatives*

- 10 = Auto based pickup (included El Camino, Caballero, Ranchero, Brat, and Rabbit Pickup)
- 11 = Auto based panel (Cargo Station Wagon, auto-based ambulance/hearse)
- 12 = Large limousine (More than four side doors or stretched chassis)
- 13 = Three wheel automobile or automobile derivative

#### *Utility Vehicles*

- 14 = Compact Utility-(includes Jeep CJ-2-CJ7, Scrambler, Golden Eagle, Renegade, Laredo, Cherokee (84 and after), Wrangler, Commando, Jeepster, GEO Tracker, Dispatcher, Bronco & Bronco II, 4 Runner, S15 Jimmy, Typhoon, Bravada, Thing, T30, Raider, Pathfinder, Trooper, Trooper II, Amigo, Rodeo, Navajo, RAV-4, Montero, Samurai, Sidekick, Rocky, Passport, Defender, Sportage, Mountaineer, Explorer, and S-10 Blazer)
- 15 = Large Utility (Jeep Cherokee (83 & before), Ramcharger, Trail duster, Bronco-full size, Blazer Fullsize, Tahoe, Jimmy Fullsize, Land Cruiser, Rover, Range Rover, Hummer, Expedition, Navigator, Scout, and Yukon)
- 16 = Utility Station wagon (Chevrolet Suburban, GMC Suburban, Travelall, Grand Wagoneer, and Suburban Limousin)
- 19 = Utility Vehicle, Unknown Body type

#### *Van-Based Light Trucks ( $\leq 4,536$ kg GVWR)*

- 20 = Minivan (Chrysler Town & Country, Astro, Caravan, Grand Caravan, Plymouth Vista, Aerostar, Safari, Voyager, Mini-Ram, Dodge Vista, Toyota Cargo Van, Toyota Van, Vanagon, VW Bus, Kombi, Previa, Lumina APV, Windstar, Odyssey Oasis, Villager, Silhouette, Transport, Nissan Minivan, Quest, Expo Wagon, Mitsubishi Minivan)
- 21 = Large Van (Sportvan, Chevy Van, Club Wagon, Ford Econoline, Ram Van, Chateau, E150-E350, G10 G30, Ram Wagon, Vandura, Rally Voyager (83 and before), Beauville, Sportsman, B150-350, Royal, Maxi-wagon, Tradesman, G15-35)
- 22 = Step Van or Walk-in Van ( $\leq 4,536$  kg GVWR)
- 23 = Van-based Motor-home
- 24 = Van-based School Bus (*added in 1993*)
- 25 = Van-based Other Bus (*added in 1993*)
- 28 = Other Van Type
- 29 = Unknown Van type

#### *Light Conventional Trucks (Pickup style cab, $\leq 4,536$ kg GVWR)*

- 30 = Compact pickup (S-10, LUV, Ram 50, Rampage, Courier, Ranger, S-5, Pup, Mazda Pickup, Mitsubishi Truck, Datsun/Nissan Pickup, Arrow Pickup, Scamp, Toyota Pickup, VW Pickup, D50, Colt P/U, T-10, S-15, T-15, Ram 100, Dakota, Sonoma)
- 31 = Large pickup (C10-C35, Jeep P/U, Comanche, Ram P/U, K10-K35, D100-D350, W100-350, F100-F350, R100-500, R10-R35, V10-35, Silverado, Sierra, T100)
- 32 = Pickup with slide-in camper
- 33 = Convertible Pickup
- 39 = Unknown (pickup style) light conventional truck

#### *Other Light Trucks ( $\leq 4,536$ kg GVWR)*

- 40 = Cab chassis based (included rescue vehicle, light stake, dump, and tow truck)
- 41 = Truck based panel
- 42 = Light truck based motor home (chassis mounted)
- 45 = Other light truck type
- 48 = Unknown other light truck type (utility, van, pickup, or other light truck)

## Variable Definitions and Codes – Vehicle File

---

49 = Unknown light vehicle type (automobile, utility, van, or light truck)

*Buses (excludes van based)*

50 = School bus type (designed to carry students, not cross country or transit)

58 = Other bus (e.g., transit, intercity, bus based motor home)

59 = Unknown bus type

*Medium/Heavy Trucks (>4,536 kg GVWR)*

60 = Step van

64 = Single unit straight truck

65 = Medium/heavy truck-based motor home

66 = Truck-tractor (cab only, or with any number of trailing units; any WEIGHT)

78 = Unknown medium/heavy truck type

79 = Unknown truck type (light/medium/heavy)

*Motored Cycles (Does not include all terrain vehicles/cycles)*

80 = Motorcycle

81 = Moped (motorized bicycle)

82 = Three wheeled motorcycle or moped

88 = Other motored cycle type (minibike, motor scooter)

89 = Unknown motored cycle type

*Other Vehicles*

90 = ATV (all terrain vehicle including dune/swamp buggy) and ATC (all terrain cycle)

91 = Snowmobile

92 = Farm equipment other than trucks

93 = Construction equipment other than trucks (includes graders)

97 = Other type vehicle (includes go-cart, fork lift, city street sweeper, motorized wheel chair)

99 = Unknown body type

## V05H Hot-deck Imputed Body Type

---

**Definition:** This attributes for this imputed variable have changed over the years to mirror the values for **Body Type**, excluding values "49", "79", and "99" for unknown light vehicle type, unknown truck type (light/medium/heavy), and unknown body type, respectively. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name:** BDYTYP\_H [V5N.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V06    Model Year**

---

**Definition:** The model year of the vehicle. From 1988 to 1998, model years earlier than 1941 were coded “1940.” Starting in 1999 the actual model year was coded for all vehicles.

**SAS Name:** MODEL\_YR [V6Z. ]

#### **Attribute Codes 1988-Later**

1940            = Model year 1940 and earlier (actual model years from 1999 onward)  
1941-2001    = Model Year  
9999           = Unknown

### **V06I    Univariate Imputed Model Year**

---

**Definition:** This imputed variable has the same definition and element values as ***Model Year***, excluding value "9999" for unknown model year. (See ***Understanding the GES Imputation Process*** section of this manual.)

**SAS Name:** MDLYR\_I [V6Z.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V07 Vehicle Identification Number**

---

**Definition:** The vehicle identification number assigned by the vehicle manufacturer. The VIN contains information on the vehicle such as: manufacturer, model year, model, body type, restraint type, etc. If a character of the VIN is missing or undecipherable, that character is blank. Characters beyond the 11<sup>th</sup> are omitted from the data because they contain sequential production numbers which can uniquely identify the vehicle.

**SAS Name: VIN**

#### **Attribute Codes 1988-Later Character**

0000000000 = No VIN

Actual VIN (left justified, up to 11 alphanumeric characters)

9999999999 = Unknown VIN

## Variable Definitions and Codes – Vehicle File

---

### V08 Special Use

---

**Definition:** Indicates whether the vehicle has a special use. Special use means "in use" and not necessarily emergency use. All military vehicles are classified as "4" even if they are police, ambulance, or fire trucks.

**SAS Name: SPEC\_USE [V8N.]**

#### Attribute Codes

##### 1988-1991

0 = No Special Use  
1 = Taxi  
2 = Vehicle Used as School Bus  
3 = Vehicle Used as Other Bus  
4 = Military  
5 = Police  
6 = Ambulance  
7 = Fire truck  
  
8 = Other (Farm or Construction Equip., Etc.)  
9 = Unknown

##### 1992-Later

0 = No Special Use  
1 = Taxi  
2 = Vehicle Used as School Bus  
3 = Vehicle Used as Other Bus  
4 = Military  
5 = Police  
6 = Ambulance  
7 = Fire Truck and Car  
10 = Hearse  
11 = Farm Equipment  
12 = Construction Equipment  
99 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V09    Emergency Use**

---

**Definition:** Indicates if a "4" through "7" *Special Use* (V8) vehicle is on an emergency run. Value "0" is coded if applicable vehicle was not on an emergency run or it was not one of the applicable vehicles.

**SAS Name:** EMCY\_USE [V9Z.]

#### **Attribute Codes 1988-Later**

0 = No Emergency Use or Not an Applicable Vehicle

1 = Yes

9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V10 Number of Occupants Coded**

---

**Definition:** This variable has been in the Vehicle data set for all GES years. The SAS name has stayed the same but the definition has changed. From 1988 to 1989 V10 (OCC\_INVL) represented the number of occupants in the vehicle and V10A (OCC\_COD) represented the number of occupants in the vehicle that were coded. The number coded and the number involved are not always the same because, for example, some PARs have information only for injured occupants. In 1990 V10A (OCC\_COD) was dropped and V10 (OCC\_INVL) changed to represent the number of occupants coded. The definition of V10 has stayed the same since 1990. In 2000 V10B (NUMOCCS), representing the total number of occupants, was added to the Vehicle data set.

**SAS Name: OCC\_INVL**

#### **Attribute Codes 1988-1989 (Number of Occupants Involved)**

0-95 = Number of Occupants Involved  
96 = 96 or more  
97 = Unknown-Only Injured Reported  
99 = Unknown

#### **Attribute Codes 1990-1999 (Number of Occupants Coded)**

0-29 = Number of Occupants Coded  
30 = 30 or more

#### **Attribute Codes 2000-Later (Number of Occupants Coded)**

x = Number of occupants coded

### **V10A Number of Occupants Coded**

---

**Definition:** Derived by counting the number of occupants including drivers that were coded for this vehicle. This variable was dropped from the Vehicle data set in 1990.

**SAS Name: OCC\_COD**

#### **Attribute Codes 1988 -1989**

0-30 = Number of Occupants Coded  
99 = Unknown

### **V10B Number of Occupants Involved**

---

**Definition:** Indicates the number of persons including drivers that were occupants of this vehicle.

#### **2000-Later**

**SAS Name: NUMOCCS**

0-998 = Number of Occupants Involved  
999 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V11 Travel Speed**

---

**Definition:** Travel speed in miles per hour.

**SAS Name:** SPEED [V11Z.]

#### **Attribute Codes**

##### **1988-1999**

0 = Stopped Vehicle  
1-96 = Travel Speed (MPH)  
97 = Ninety-Seven MPH or Greater  
99 = Unknown

##### **2000-Later**

0 = Stopped Vehicle  
1-998 = Travel Speed (MPH)  
999 = Unknown



## Variable Definitions and Codes – Vehicle File

---

### V12 Vehicle Contributing Factors

---

**Definition:** Indicates vehicle factors that may have contributed to the cause of the crash.

If a vehicle has multiple contributing factors (some of which may not be defects), the lowest of the attribute codes shown below is selected. From 1988 to 1994 the data element was called *Vehicle Defects* and the SAS name was DEFECT; in 1995 the name was changed to *Vehicle Contributing Factors* to allow for inclusion of all factors that may have contributed to this vehicle's involvement in the crash. The SAS name was changed to FACTOR.

Starting in 2002 multiple contributing factors for a vehicle are available in the Factor data set (SAS variable MFACTOR).

#### Attribute Codes:

##### 1988-1994

**SAS Name: DEFECT [V12Z.]**

0 = None  
1 = Tires  
2 = Brake System  
3 = Steering System-Tie Rod, Kingpin, Ball Joint, etc.  
4 = Suspension-Springs, Shock Absorbers,  
McPherson Struts, Control Arms, etc.  
5 = Power Train-Universal Joint, Drive Shaft,  
Transmission, etc.  
6 = Exhaust System  
7 = Headlights  
8 = Signal Lights  
9 = Other Lights  
10 = Wipers  
11 = Wheels  
12 = Mirrors  
13 = Driver Seating and Control  
14 = Body, Doors  
15 = Trailer Hitch  
50 = Hit-and-Run Vehicle  
97 = Vehicle Defects-No Details  
98 = Other Vehicle Defects  
99 = Unknown if Vehicle Has Defects

##### 1995-Later

**SAS Name: FACTOR [V12N.]**

0 = None  
1 = Tires  
2 = Brake System  
3 = Steering System-Tie Rod, Kingpin, Ball Joint, etc.  
4 = Suspension-Springs, Shock Absorbers,  
McPherson Struts, Control Arms, etc.  
5 = Power Train-Universal Joint, Drive Shaft,  
Transmission, etc.  
6 = Exhaust System  
7 = Headlights  
8 = Signal Lights  
9 = Other Lights  
10 = Wipers  
11 = Wheels  
12 = Mirrors  
13 = Driver Seating and Control  
14 = Body, Doors  
15 = Trailer Hitch  
50 = Hit-and-Run Vehicle  
97 = Vehicle Contributing Factors-No Details\*  
98 = Other Vehicle Contributing Factors\*  
99 = Unknown if Vehicle Has Contributing Factors

## Variable Definitions and Codes – Vehicle File

---

### V13 Vehicle Trailing

---

**Definition:** Indicates if vehicle was pulling a trailer unit. A trailer unit can be a horse trailer, fifth wheel trailer, camper, boat, truck trailer, towed vehicle or any other trailer.

**SAS Name:** TRAILER [V13N.]

**Attribute Codes:**

**1988-1998**

0 = No  
1 = Yes, One Trailing Unit  
2 = Yes, Two Trailing Units  
3 = Yes, Three or More Trailing Units  
4 = Yes, Number of Trailing Units Unknown  
9 = Unknown

**1999-Later**

1 = No  
2 = Yes, One Trailing Unit  
3 = Yes, Two Trailing Units  
4 = Yes, Three or More Trailing Units  
5 = Yes, Number of Trailing Units Unknown  
6 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V14 Jackknife**

---

**Definition:** Indicates if a jackknife occurred. Jackknife occurs when the trailer does not follow directly behind the power unit (tracking) and the driver did not initiate the non-tracking situation. Jackknife is defined differently for V14 and A06, First Harmful Event. In A06 jackknife is defined as sufficient rotation between a vehicle/trailer that they contact each other. For V14, contact is not required

**SAS Name: JACKNIFE [V14Z.]**

#### **Attribute Codes 1988-Later**

0 = No Jackknife Noted on PAR

1 = Jackknife Occurred

## Variable Definitions and Codes – Vehicle File

---

### V15 Rollover

---

**Definition:** Indicates if a rollover occurred (tripped or untripped). Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis.

The coding of this variable changed after 1991. See *Rollover Type (V30)* for rollover after 1991.

**SAS Name: ROLLOVER [V15Z.]**

**Attribute Codes: 1988-1991**

0 = No Rollover Noted on PAR

1 = Rollover Occurred

## **Variable Definitions and Codes – Vehicle File**

---

### **V16 Fire Occurrence**

---

**Definition:** Indicates whether or not a vehicle sustained fire damage.

**SAS Name:** FIRE [V16Z.]

**Attribute Codes 1988-Later**

0 = No Fire Noted on PAR  
1 = Fire Occurred in Vehicle

## Variable Definitions and Codes – Vehicle File

---

### V17 Maximum Damage Area

---

**Definition:** This variable reports the most severe area of damage on the vehicle.

In 1990, this variable was replaced with *Initial Point of Impact* (V24) and *Damage Areas* (V25).

**SAS Name:** DAM\_AREA [V17Z.]

#### Attribute codes 1988-1989

- 0 = No damage
- 1 = Front
- 2 = Right Side
- 3 = Left Side
- 4 = Back
- 5 = Top
- 6 = Undercarriage
- 8 = Multiple Damage Areas
- 9 = Damage Area Not Determinable or Unknown

### V17H Hot-deck Imputed Damage Area

---

**Definition:** This imputed variable has the same definition and element values as **Maximum Damage Area**, excluding value 9 for damage area not determinable or unknown. (See **Understanding the GES Imputation Process** section of this manual.)

In 1990, this variable was dropped from the Vehicle data set.

**SAS Name:** DAM\_AR\_H [V17Z.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V18    Damage Severity**

---

**Definition:** Reports the severity of the vehicle damage.

**SAS Name:** VEH\_SEV [V18Z.]

#### **Attribute Codes**

##### **1988-2003**

0 = None  
1 = Minor  
2 = Functional (Moderate)  
3 = Disabling (Severe)  
9 = Unknown

##### **2004**

0 = None  
1 = Minor (and not towed due to damage)  
2 = Moderate  
3 = Severe  
9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V19 Manner of Leaving Scene**

---

**Definition:** Measures the disposition of the vehicle, or power unit of an articulated combination, at the crash scene.

**SAS Name:** TOWED [V19N.]

#### **Attribute Codes**

##### **1988-1989**

1 = Driven  
2 = Towed Away  
3 = Abandoned  
4 = Unknown

##### **1990-Later**

1 = Driven  
2 = Towed Due to Damage  
3 = Towed Not Due to Damage  
4 = Abandoned  
9 = Unknown if Towed



## Variable Definitions and Codes – Vehicle File

### V20 Most Harmful Event

**Definition:** Indicates the most severe property damage or injury producing event for the vehicle.

**SAS Name:** V\_EVENT [V20NZ.]

#### Attribute Codes:

1988-1991	1992-1998	1999-Later	
			<i>Noncollision</i>
1	1	1	Rollover/Overturn
2	2	2	Fire/Explosion
3	3	3	Immersion
4		4	Gas Inhalation
5	5	5	Jackknife
6	6	6	Noncollision Injury (Injured in Vehicle, or Fell From Veh.)
	50	7	Pavement Surface Irregularity (Ruts, Potholes, Grates,etc.)
8	8	8	Other Noncollision
9	9	9	Noncollision-No Details
10	10	10	Thrown or Falling Object
			<i>Collision with Object Not Fixed</i>
21	21	21	Pedestrian
22	22	22	Cycle or Cyclist (Pedalcyclist or Pedalcycle)
23	23	23	Railway Train
24	24	24	Animal
25	25	25	Motor Vehicle in Transport
26	26	26	Parked Motor Vehicle (or Other M.V. Not in Transport)
27	27	27	Other Type Non-Motorist
28	28	28	Other Object Not Fixed
29	29	29	Object Not Fixed-No Details
			<i>Collision with Fixed Object</i>
31	31	31	Ground
32	32	32	Building
33	33	33	Impact Attenuator/Crash Cushion
34	34	34	Bridge Structure (Bridge Pier/Abutment/Parapet End/Rail)
35	35	35	Guardrail
36	36	36	Concrete Traffic Barrier or Other Longitudinal Barrier Type
37	37	37	Post, Pole or Support (Sign Post, Utility Post)
38	38	38	Culvert or Ditch
39	39	39	Curb
40	40	40	Embankment
41	41	41	Fence
42	42	42	Wall
43	43	43	Fire Hydrant
44	44	44	Shrubbery or Bush
45	45	45	Tree
46	46	46	Boulder
48	58	58	Other Fixed Object
49	59	59	Fixed Object-No Details
			<i>Other/Unknown</i>
97			Other-No Details* (1988-1989 only)
99	99	99	Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V20H Hot-deck Imputed Most Harmful Event**

---

**Definition:** This imputed variable has the same element values as *Most Harmful Event*, excluding value "99" for unknown most harmful event . (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** V\_EVNT\_H [V20NZ.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V20A Most Harmful Event Number**

---

**Definition:** Indicates the number of the event that caused the most severe property damage or injury for the vehicle. This variable may be used to identify the specific event in the Event data set.

This variable was added to the Event data set in 1999.

**SAS Name: MHENUM**

**Attribute Codes 2000-Later**

1-xx = Event Number

## Variable Definitions and Codes – Vehicle File

---

### V21 Vehicle Maneuver

---

**Definition:** Reports the last action this vehicle's driver engaged in either just prior to the impact or just before the driver's realized the impending danger.

This variable changed in 1992, when GES began to collect precrash information. V21, Vehicle Maneuver, was changed to Movement Prior to Critical Event. In addition to changing the definition, element values were added, modified, or deleted and the SAS name changed. See the next page for variable definition and coding for GES years 1992 to current.

**SAS Name: MANEUVER [V21Z.]**

#### Attribute Codes 1988-1991

- 1 = Going Straight
- 2 = Slowing or Stopping in Traffic Lane
- 3 = Starting in Traffic Lane
- 4 = Stopped in Traffic Lane
- 5 = Passing or Overtaking Another Vehicle
- 6 = Leaving a Parked Position
- 7 = Parked
- 8 = Entering a Parked Position
- 9 = Maneuvering to Avoid an Animal, Pedestrian, Object or Vehicle
- 10 = Turning Right
- 11 = Turning Left
- 12 = Making U-turn
- 13 = Backing Up (other than for parking purposes)
- 14 = Changing Lanes or Merging
- 15 = Negotiating a Curve
- 98 = Other
- 99 = Unknown

### V21I Univariate Imputed Vehicle Maneuver

---

**Definition:** This imputed variable has the same as definition and element values as **Vehicle Maneuver**, excluding value "99" for unknown vehicle maneuver. (See **Understanding the GES Imputation Process** section of this manual.)

**1988-1991**

**SAS Name: MANEUV\_I [V21Z.]**

## Variable Definitions and Codes – Vehicle File

---

### V21 Movement Prior to Critical Event

---

**Definition:** Records the attribute which best describes this vehicle's activity prior to the driver's realization of an impending critical event or just prior to impact if the driver took no action or had no time to attempt to any evasive maneuvers.

**SAS Name:** P\_CRASH1 [V21NZ.]

#### Attribute Codes:

1992- 1994	1995-1998	1999-Later
	0	0 No Driver Present
1	1	1 Going Straight
2	2	2 Decelerating in Traffic Lane
	3	3 Accelerating in traffic lane
3	4	4 Starting in Traffic Lane
4	5	5 Stopped in Traffic Lane
5	6	6 Passing or Overtaking Another Vehicle
6	7	7 Disabled or Parked in Travel Lane
7	8	8 Leaving a Parked Position
8	9	9 Entering a Parked Position
10	10	10 Turning Right
11	11	11 Turning Left
12	12	12 Making U-turn
13	13	13 Backing Up (other than for parking purposes)
15	14	14 Negotiating a Curve
16	15	15 Changing Lanes
17	16	16 Merging
18	17	17 Successful Corrective Action to a Previous Critical Event
94		More than Two Vehicles Involved
98	97	97 Other
99	99	99 Unknown

### V21I Univariate Imputed Movement Prior to Critical Event

---

**Definition:** This imputed variable has the same definition and element values as ***Movement Prior to Critical Event***, excluding value "99" for unknown movement prior to critical event. (See ***Understanding the GES Imputation Process*** section of this manual.)

**1992-Later**

**SAS Name:** MANEUV\_I [V21NZ.]

## **Variable Definitions and Codes – Vehicle File**

---

### **V22 Vehicle Role**

---

**Definition:** Indicates vehicle role in single or multi-vehicle crashes.

**SAS Name:** VEH\_ROLE [V22Z.]

**Attribute Codes:** 1988-Later

0 = Non-Collision

1 = Striking

2 = Struck

3 = Both

9 = Unknown

### **V22I Univariate Imputed Vehicle Role**

---

**Definition:** This imputed variable has the same definition and element values as **Vehicle Role**, excluding value "9" for unknown vehicle role. (See ***Understanding the GES Imputation Process*** section of this manual.)

**1988-Later**

**SAS Name:** VROLE\_I [V22Z.]

## Variable Definitions and Codes – Vehicle File

---

### V23 Accident Type

---

**Definition:** Categorizes the precrash situation. For graphic descriptions of possible values see Appendix B.

Attribute Code 97, Untripped Rollover was added in 1992 and removed in 1999.

**SAS Name: ACC\_TYPE [V23N.]**

#### Attribute Codes 1988-Later

0 No Impact

#### *Category I: Single Driver*

##### Configuration A: Right Roadside Departure

- 1 Drive Off Road
- 2 Control/Traction Loss
- 3 Avoid Collision with Vehicle, Pedestrian, Animal
- 4 Specifics Other
- 5 Specifics Unknown

##### Configuration B: Left Roadside Departure

- 6 Drive Off Road
- 7 Control/Traction Loss
- 8 Avoid Collision With Vehicle, Pedestrian, Animal
- 9 Specifics Other
- 10 Specifics Unknown

##### Configuration C: Forward Impact

- 11 Parked Vehicle
- 12 Stationary Object
- 13 Pedestrian/Animal
- 14 End Departure
- 15 Specifics Other
- 16 Specifics Unknown

#### *Category II: Same Trafficway, Same Direction*

##### Configuration D: Rear End

- 20 Stopped
- 21 Stopped, Straight
- 22 Stopped, Left
- 23 Stopped, Right
- 24 Slower
- 25 Slower, Going Straight
- 26 Slower, Going Left
- 27 Slower, Going Right
- 28 Decelerating (Slowing)
- 29 Decelerating (Slowing), Going Straight
- 30 Decelerating (Slowing), Going Left

## Variable Definitions and Codes – Vehicle File

---

- 31 Decelerating (Slowing), Going Right
- 32 Specifics Other
- 33 Specifics Unknown

### Configuration E: Forward Impact

- 34 This Vehicles Frontal Area Impacts Another Vehicle.
- 35 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 36 This Vehicles Frontal Area Impacts Another Vehicle.
- 37 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 38 This Vehicles Frontal Area Impacts Another Vehicle.
- 39 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 40 This Vehicles Frontal Area Impacts Another Vehicle.
- 41 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 42 Specifics Other
- 43 Specifics Unknown

### Configuration F: Sideswipe/Angle

- 44 Straight Ahead on Left.
- 45 Straight Ahead on Left/Right.
- 46 Changing Lanes to the Right
- 47 Changing Lanes to the Left
- 48 Specifics Other
- 49 Specifics Unknown

### *Category III: Same Trafficway, Opposite Direction*

#### Configuration G: Head-On

- 50 Lateral Move (Left/Right)
- 51 Lateral Move (Going Straight)
- 52 Specifics Other
- 53 Specifics Unknown

#### Configuration H: Forward Impact

- 54 This Vehicles Frontal Area Impacts Another Vehicle.
- 55 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 56 This Vehicles Frontal Area Impacts Another Vehicle.
- 57 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 58 This Vehicles Frontal Area Impacts Another Vehicle.
- 59 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 60 This Vehicles Frontal Area Impacts Another Vehicle.
- 61 This Vehicle Is Impacted by Frontal Area of Another Vehicle
- 62 Specifics Other
- 63 Specifics Unknown

#### Configuration I: Sideswipe/Angle

- 64 Lateral Move (left/Right)
- 65 Lateral Move (Going Straight)
- 66 Specifics Other
- 67 Specifics Unknown

### *Category IV: Changing Trafficway, Vehicle Turning*



### Configuration J: Turn Across Path

- 68 Initial Opposite Directions (Left/Right)
- 69 Initial Opposite Directions (Going Straight)
- 70 Initial Same Directions (Turning Right)
- 71 Initial Same Directions (Going Straight)
- 72 Initial Same Directions (Turning Left)
- 73 Initial Same Directions (Going Straight)
- 74 Specifics Other
- 75 Specifics Unknown

### Configuration K: Turn Into Path

- 76 Turn Into Same Direction (Turning Left)
- 77 Turn Into Same Direction (Going Straight)
- 78 Turn Into Same Direction (Turning Right)
- 79 Turn Into Same Direction (Going Straight)
- 80 Turn Into Opposite Directions (Turning Right)
- 81 Turn Into Opposite Directions (Going Straight)
- 82 Turn Into Opposite Directions (Turning Left)
- 83 Turn Into Opposite Directions (Going Straight)
- 84 Specifics Other
- 85 Specifics Unknown

## *Category V: Intersecting Paths (Vehicle Damage)*

### Configuration L: Straight Paths

- 86 Striking from the Right
- 87 Struck on the Right
- 88 Striking from the Left
- 89 Struck on the Left
- 90 Specifics Other
- 91 Specifics Unknown

## *Category VI: Miscellaneous*

### Configuration M: Backing, Etc.

- 92 Backing Vehicle
- 93 Other Vehicle or Object
- 97 Untripped Rollover (1992 to 1998 only)
- 98 Other Accident Type
- 99 Unknown Accident Type

## Variable Definitions and Codes – Vehicle File

---

### V24 Initial Point of Impact

---

**Definition:** The first impact point that produced property damage or personal injury (regardless of *FIRST* or *MOST HARMFUL EVENT*). This variable was added to the Vehicle data set in 1990.

**SAS Name:** IMPACT [V24NZ.]

#### Attribute Codes:

##### 1990-1991

0 = No Damage/Non-Collision  
1 = Front  
2 = Right Side  
3 = Left Side  
4 = Back  
5 = Top  
6 = Undercarriage  
7 = Corner

##### 1992-Later

0 = No Damage/Non-Collision  
1 = Front  
2 = Right Side  
3 = Left Side  
4 = Back  
5 = Top  
6 = Undercarriage  
11 = Front Right Corner  
12 = Front Left Corner  
13 = Back Right Corner  
14 = Back Left Corner

9 = Initial Point of Impact Unknown 99 = Initial Point of Impact Unknown

### V24H Hot-deck Imputed Initial Point of Impact

---

**Definition:** This imputed variable has the same definition and element values as *Initial Point of Impact*, excluding value "9" for unknown initial point of impact. (See *Understanding the GES Imputation Process* section of this manual.)

#### 1990 -Later

**SAS Name:** IMPACT\_H [V24NZ.]

## Variable Definitions and Codes – Vehicle File

---

### V25 Damage Areas

---

**Definition:** This vehicle's specific areas damaged due to impact. The totality of the damage is used when determining the specific areas. Five digits are used to indicate up to five specific areas of damage on the vehicle.

This variable replaced *Maximum Damage Area* (V17) in 1990.

**SAS Name:** DAM\_AREA [V25N.]

#### Attribute Codes 1990-Later

0 = No damage  
1 = Front  
2 = Right side  
3 = Left side  
4 = Back  
5 = Top  
6 = Undercarriage  
7 = All areas damaged  
9 = Unknown damage areas

Examples of complete codes are:

0 = No damage  
12000 = Front and right damage only  
12999 = Front and right damage and unknown if damaged in other areas

## Variable Definitions and Codes – Vehicle File

---

**PRE CRASH VARIABLES:** In 1992, variables **V21, V26-V29** were added to the Vehicle data set. These variables were designed to identify: (1) what the vehicle was doing just prior to the critical precrash event, (2) what made the vehicle's situation critical, (3) what was the corrective action made, if any, to this critical situation, and what was the (4) location and (5) stability of the vehicle just prior to impact.

### **V26 Critical Event**

---

**Definition:** Identifies the critical event which made the crash imminent (i.e., something occurred which made the collision possible). A critical event is coded for each vehicle and identifies the circumstances leading to the vehicle's first impact in the crash. From 1992 to 1993 coding distinguishes between events initiated by "this" vehicle, events initiated by the "other" vehicle, and events initiated by non-motorists. In 1994 coding changed to eliminate the concept of initiation, and to add factors. In 1999 there were extensive additions, deletions, and renumbering.

**SAS Name: P\_CRASH2 [V26Z.]**

**Attribute Codes 1992-1993:**

0 = Not Applicable/No Collision

#### **I. CRITICAL EVENT INITIATED BY THIS VEHICLE**

*Loss of Control Due to:*

- 1 = Blow out or flat tire
- 2 = Stalled engine
- 3 = Disabling vehicle failure (e.g., wheel fell off)
- 4 = Minor vehicle failure
- 5 = Poor road conditions (puddle, pothole, ice, etc.)
- 6 = Excessive speed
- 9 = Other or unknown reason

*Traveling Over Edge of Roadway:*

- 10 = Over left edge of roadway
- 11 = Over right edge of roadway
- 12 = End departure
- 19 = Unknown which edge

*In Another Vehicle's Lane:*

- 20 = Stopped
- 21 = Traveling in same direction with lower speed
- 22 = Traveling in same direction with higher speed
- 23 = Traveling in opposite direction

*Encroaching Into Another Vehicle's Lane: At Non-Junction*

- 26 = From adjacent lane (opposite direction)
- 30 = From adjacent lane (same direction)-over left lane line
- 31 = From adjacent lane (same direction)-over right lane line

*Encroaching Into Another Vehicle's Lane: At Junction*

- 33 = Entering intersection-turning into same direction
- 34 = Entering intersection-straight across path
- 35 = Entering intersection-turning into opposite direction
- 36 = Entering intersection-intended path unknown
- 37 = Entering driveway, alley access, etc.

## **Variable Definitions and Codes – Vehicle File**

---

- 38 = From driveway, alley access, etc.-turning into same direction
- 39 = From driveway, alley access, etc.-straight across path
- 40 = From driveway, alley access, etc.-turning into opposite direction
- 41 = From driveway, alley access, etc.-intended path unknown
- 42 = Entering from "Yield" entrance (ramp/channel)
- 48 = Encroaching-details unknown
- 49 = This vehicle initiated critical event-details unknown

### **II. CRITICAL EVENT INITIATED BY THE OTHER VEHICLE**

#### *Motor Vehicle Already In This Vehicle's Lane:*

- 50 = Stopped
- 51 = Traveling in same direction with lower speed
- 52 = Traveling in same direction with higher speed
- 53 = Traveling in opposite direction

#### *Another Vehicle Encroaching Into This Vehicle's Lane: At Non-Junction*

- 56 = From adjacent lane (opposite direction)
- 60 = From adjacent lane (same direction)-over left lane line
- 61 = From adjacent lane (same direction)-over right lane line
- 64 = From parallel/diagonal parking lane

#### *Another Vehicle Encroaching Into This Vehicle's Lane: At Junction*

- 65 = Entering intersection-turning into same direction
- 66 = Entering intersection-straight across path
- 67 = Entering intersection-turning into opposite direction
- 68 = Entering intersection-intended path unknown
- 69 = Entering driveway, alley access, etc.
- 70 = From driveway, alley access, etc.-turning into same direction
- 71 = From driveway, alley access, etc.-straight across path
- 72 = From driveway, alley access, etc.-turning into opposite direction
- 73 = From driveway, alley access, etc.-intended path unknown
- 74 = Entering from "Yield" entrance (ramp/channel)
- 78 = Encroaching-details unknown
- 79 = Other vehicle initiated critical event-details unknown

### **III. CRITICAL EVENT INITIATED BY PEDESTRIAN, PEDALCYCLIST, OTHER NON-MOTORIST, ANIMAL OR OBJECT**

- 80 = Pedestrian in roadway
- 81 = Pedestrian approaching roadway
- 83 = Pedalcyclist/other non-motorist in roadway
- 84 = Pedalcyclist/other non-motorist approaching roadway
- 86 = Pedestrian/Pedalcyclist/other non-motorist-unknown location
- 87 = Animal in roadway
- 88 = Animal approaching roadway
- 90 = Object in roadway
- 93 = Animal or object-unknown location

### **IV. MISCELLANEOUS**

- 94 = More than two vehicles involved
- 98 = Other event
- 99 = Unknown

## Variable Definitions and Codes – Vehicle File

---

### Attribute Codes:

1994-1998    1999-Later

0                      Not Applicable/No Collision

#### *This Vehicle Loss of Control Due to:*

10	1	Blow out or flat tire
20	2	Stalled engine
30	3	Disabling vehicle failure (e.g., wheel fell off)
40	4	Minor vehicle failure
50	5	Poor road conditions (puddle, pothole, ice, etc.)
60	6	Excessive speed
99		Other or unknown reason
	8	Other cause of control loss
	9	Unknown cause of control loss

#### *This Vehicle Traveling:*

	10	Over the lane line on left side of travel lane
	11	Over the lane line on right side of travel lane
100	12	Over left edge of roadway
101	13	Over right edge of roadway
199		Unknown which edge
102	14	End departure
	15	Turning Left at intersection
	16	Turning right at intersection
	17	Crossing over (passing through) intersection
	18	This vehicle decelerating
	19	Unknown travel direction

#### *In Another Vehicle's Lane:*

200	Stopped
210	Traveling in same direction with lower steady speed
215	Traveling in same direction while decelerating (added in 1995)
220	Traveling in same direction with higher speed
230	Traveling in opposite direction

#### *Encroaching Into Another Vehicle's Lane: At Non-Junction*

300	From adjacent lane (opposite direction)
310	From adjacent lane (same direction)-over left lane line
320	From adjacent lane (same direction)-over right lane line
330	From parallel/diagonal parking lane

#### *Encroaching Into Another Vehicle's Lane: At Junction*

410	Entering intersection-turning into same direction
411	Entering intersection-straight across path
412	Entering intersection-turning across path
413	Entering intersection-turning into opposite direction
429	Entering Intersection-intended path unknown
430	Entering driveway, alley access, etc.
440	From driveway, alley access, etc.-turning into same direction
441	From driveway, alley access, etc.-straight across path
442	From driveway, alley access, etc.-turning into opposite direction
459	From driveway, alley access, etc.-intended path unknown

## Variable Definitions and Codes – Vehicle File

---

460		Entering from "Yield" entrance (ramp/channel)
497		Encroaching-other
498		Encroaching-details unknown
499		This vehicle initiated critical event-details unknown

### *Other Motor Vehicle In Lane*

500	50	Other vehicle stopped
510	51	Traveling in same direction with lower steady speed
515	52	Traveling in same direction while decelerating (added in 1995)
520	53	Traveling in same direction with higher speed
530	54	Traveling in opposite direction
	55	In crossover
	56	Backing
	59	Unknown travel direction of the other motor vehicle

### *Another Vehicle Encroaching Into This Vehicle's Lane*

600		From adjacent lane (opposite direction)
610	60	From adjacent lane (same direction)-over left lane line
620	61	From adjacent lane (same direction)-over right lane line
	62	From opposite direction over left lane line
	63	From opposite direction over right lane line
630	64	From parallel/diagonal parking lane
710	65	Entering intersection-turning into same direction
711	66	Entering intersection-straight across path
712		Entering Intersection-turning across path
713	67	Entering intersection-turning into opposite direction
729	68	Entering intersection-intended path unknown
730		Entering driveway, alley access, etc.
740	70	From driveway, alley access, etc. -turning into same direction
741	71	From driveway, alley access, etc.-straight across path
742	72	From driveway, alley access, etc. -turning into opposite direction
759	73	From driveway, alley access, etc.-intended path unknown
	74	From entrance to limited access highway
760		Entering from "Yield" entrance (ramp/channel)
797		Encroaching -other
798	78	Encroaching-details unknown
799		Other vehicle initiated critical event-details unknown

### *Pedestrian, Pedacylist Or Other Non-Motorist*

800	80	Pedestrian in roadway
801	81	Pedestrian approaching roadway
	82	Pedestrian unknown location
810	83	Pedalcyclist/other non-motorist in roadway
811	84	Pedalcyclist/other non-motorist approaching roadway
	85	Pedacyclist or other non-motorist unknown location
829		Pedestrian/Pedalcyclist/other non-motorist unknown location

### *Object Or Animal*

830	87	Animal in roadway
831	88	Animal approaching roadway
	89	Animal unknown location
840	90	Object in roadway
841	91	Object approaching roadway

## Variable Definitions and Codes – Vehicle File

---

	92	Object unknown location
	859	Animal or object-unknown location
<i>Other</i>	994	More than two vehicles involved
	998 98	Other event / not applicable / no collision
<i>Unknown</i>		
	999 99	Unknown Critical Event



## Variable Definitions and Codes – Vehicle File

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### V27 Corrective Action Attempted

---

**Definition:** Describes the actions taken by the driver of the vehicle in response to the impending danger. Because this variable focuses upon the driver's action just prior to the first harmful event it is coded independently of any maneuvers associated with this vehicle's Accident Type (V23).

**SAS Name:** P\_CRASH3 [V27NZ.]

#### Attribute Codes:

1992-1998	1999–Later	
0		Not Applicable/ No Corrective Action Attempted
1		Braked/slowed
5		Backed
	0	No driver present
	1	No avoidance maneuver
	2	Braking (no lockup)
	3	Braking (lockup)
	4	Braking (lockup unknown)
	5	Releasing brakes
2	6	Steered to left
3	7	Steered to right
11	8	Braked and steered to left
12	9	Braked and steered to right
04	10	Accelerated
13	11	Accelerated and steered to left
14	12	Accelerated and steered to right
15		Steered in both directions
94		More than two vehicles involved
97		Corrective action attempted-no details
98		Other single or multiple corrective action
	98	Other actions
99	99	Unknown if driver attempted any corrective action

## Variable Definitions and Codes – Vehicle File

---

### V28 Vehicle Control After Corrective Action

---

**Definition:** Assesses the stability of the vehicle during the period immediately after the attempted corrective action up to the initial impact in the crash sequence. The stability of the vehicle prior to a corrective action is not considered.

In 1995, the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

**SAS Name:** P\_CRASH4 [V28NZ.]

#### Attribute Codes 1992-1994

- 0 = No driver present
- 1 = Vehicle control maintained after corrective action
- 2 = Vehicle rotated (yawed) clockwise
- 3 = Vehicle rotated (yawed) counter-clockwise
- 4 = Vehicle slid/skid longitudinally-no rotation
- 5 = Vehicle slid/skid laterally-no rotation
- 9 = Vehicle rotated (yawed) unknown direction
- 20 = Combination of 02-09
- 94 = More than two vehicles involved
- 98 = Other or unknown type of vehicle control was lost after corrective action
- 99 = Unknown if vehicle control was lost after corrective action

### V28 Precrash Vehicle Control

---

**Definition:** Assesses the stability of the vehicle during the period immediately prior to this vehicle's initial involvement in the crash sequence.

In 1999 extensive additions and deletions were made.

**SAS Name:** PCRASH4 [V28Z.]

#### Attribute Codes

##### 1995-1998 1999-Later

- |    |   |   |
|----|---|---|
| 0  | 0 | No driver present                                     |
| 1  |   | Vehicle control maintained                            |
| 2  |   | Vehicle rotated (yawed) clockwise                     |
| 3  |   | Vehicle rotated (yawed) counter-clockwise             |
| 4  |   | Vehicle slid/skid longitudinally-no rotation          |
| 9  |   | Vehicle rotated (yawed) unknown direction             |
| 20 |   | Combination of 02-09                                  |
| 94 |   | More than two vehicles involved                       |
| 98 |   | Other or unknown type of vehicle control was lost     |
|    | 1 | Tracking  |
|    | 2 | Skidding longitudinally-rotation less than 30 degrees |
|    | 3 | Skidding laterally-clockwise rotation                 |

## **Variable Definitions and Codes – Vehicle File**

---

4	Skidding laterally-counterclockwise rotation
7	Other vehicle loss of control (specify)
9	Preocrash stability unknown

## Variable Definitions and Codes – Vehicle File

---

### V29 Vehicle Path After Corrective Action

---

**Definition:** Identifies the consequences of the corrective action identified in variable V27 and further reports the results of the vehicle's precrash stability coded in variable V28. The response for this variable must relate directly to the response coded for variable V27.

In 1995 the name and definition of this variable changed to reflect the control of the vehicle at the time of the critical event and the first harmful event, not the control as a result of any corrective action.

**SAS Name:** P\_CRASH5 [V29Z.]

#### Attribute Codes 1992-1994

- 0 = No corrective action
- 1 = Vehicle stayed in travel lane where corrective action was initiated
- 2 = Vehicle stayed on roadway but left travel lane where corrective action was initiated
- 3 = Vehicle stayed on roadway, not known if left travel lane where corrective action was initiated
- 4 = Vehicle departed roadway
- 5 = Corrective action initiated off roadway
- 94 = More than two vehicles involved
- 99 = Vehicle path unknown

### V29 Precrash Location

---

**Definition:** Identifies the path of this vehicle prior to its first involvement in the crash sequence, and further reports the results of the vehicle's precrash stability coded in variable V28.

**SAS Name:** PCRASH5 [V29NZ.]

#### Attribute Codes

##### 1995-1998 1999-Later

0	0	No driver present
1	1	Vehicle stayed in travel lane
2	2	Vehicle stayed on roadway but left travel lane
3	3	Vehicle stayed on roadway, not known if left travel lane
4	4	Vehicle departed roadway
6	5	Vehicle remained off roadway
7	6	Vehicle returned to roadway
	7	Entered roadway
94		More than two vehicles involved
99	99	Vehicle path unknown

## Variable Definitions and Codes – Vehicle File

---

### V30 Rollover Type

---

**Definition:** Indicates if a rollover occurred (tripped or untripped). Rollover is defined as any vehicle rotation of 90 degrees or more about any true longitudinal or lateral axis. Rollover can occur at any time during the crash.

Prior to 1992, information pertaining to rollover is in the variable *Rollover (V15)*. In 1992 V30 was added to the Vehicle data set to include more specific rollover information.

**SAS Name: ROLLOVER [V30N.]**

#### Attribute Codes 1992-Later

- 0 = No rollover
- 10 = Untripped rollover
- 20 = Tripped rollover-by curb
- 21 = Tripped rollover-by guardrail
- 22 = Tripped rollover-by ditch
- 23 = Tripped rollover-by soft soil
- 28 = Tripped rollover-other
- 29 = Tripped rollover-unknown mechanism
- 99 = Rollover, unknown whether untripped or tripped

## Variable Definitions and Codes – Vehicle File

---

In 1992, variables **V31-V36** were added to the Vehicle data set. These variables include the portion of the National Governors Association (NGA) data elements which pertain specifically to crashes involving medium/heavy trucks and buses. These variables provide essential information required to analyze motor carrier crashes, and pertain only to these crashes.

### **V31 Carrier's Identification Number**

---

**Definition:** The Carrier's ID is the unique number assigned to the Carrier by the United States Department of Commerce Commission, or the State. This number will be found only on vehicles of interstate for-hire or private carriers in the transportation business. The number can be either a US DOT number (on interstate private carriers) or an ICC MC number (interstate for-hire carriers). (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

In 2002 the variable changed from numeric to character to preserve leading zeros. The SAS name changed from C\_ID\_NO to CARIDNUM.

**SAS Name: C\_ID\_NO [V31N. ]**

#### **Attribute Codes**

##### **1992-2001**

numeric

0	= Not Applicable
1-999998	= U.S. DOT or ICC MC Number
999999	= Unknown

**SAS Name: CARIDNUM [\$V31N. ]**

#### **Attribute Codes**

##### **2002**

character, length 8

##### **2003 - Later**

character, length 9

00000000	000000000	= Not Applicable
x-xxxxxxx	x-xxxxxxxxx	= U.S. DOT or ICC MC Number
99999999	999999999	= Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V32 Number of Axles on Vehicle, Including Trailers**

---

**Definition:** Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

**SAS Name:** AXLES [V32N.]

#### **Attribute Codes 1992-Later**

- 0 = Not applicable
- 2-20 = Number of Axles
- 99 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V33    Cargo Body Type**

---

**Definition:** Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 50-64, 66-79 only.)

**SAS Name:** CARG\_TYP [V33N.]

#### **Attribute Codes 1992-Later**

- 0 = Not applicable
- 1 = Bus
- 2 = Van/enclosed box
- 3 = Cargo tank
- 4 = Flatbed
- 5 = Dump
- 6 = Concrete mixer
- 7 = Auto transporter
- 8 = Garbage/refuse
- 98 = Other
- 99 = Unknown cargo body type



## **Variable Definitions and Codes – Vehicle File**

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### **V34 Hazardous Materials Placarded**

---

**Definition:** Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5)= 60, 64, 66-79 only)

**SAS Name:** HAZ\_MAT [V34N.]

#### **Attribute Codes 1992-Later**

0 = Not applicable

1 = Yes

2 = No

9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V35 Hazardous Materials Placard Number**

---

**Definition:** Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5) = 60, 64, 66-79 only)

**SAS Name:** HAZM\_NO

#### **Attribute Codes 1992-Later**

0	= Not applicable
1-9998	= (Actual number)
9999	= Unknown

## **Variable Definitions and Codes – Vehicle File**

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### **V36 Hazardous Materials Release**

---

**Definition:** Indicates whether or not any hazardous cargo was released from the vehicle cargo tank or compartment. Coded for buses and trucks over 4,500 kg GVWR (Collected for *Bodytype* (V5)= 60, 64, 66-79 only).

**SAS Name:** HAZ\_MA\_R [V36N.]

#### **Attribute Codes 1992-Later**

0 = Not applicable

1 = Yes

2 = No

9 = Unknown

## Variable Definitions and Codes – Vehicle File

---

### V90 Maximum Injury Severity in Vehicle

---

**Definition:** Indicates the single most severe injury level reported for any occupant in this vehicle. This variable is derived by comparing the injury severity for each occupant record in this vehicle. The following order of severity codes has been used since 2001.

- 4-Fatal*
- 3- Incapacitating*
- 2-Non- incapacitating*
- 1-Possible Injury*
- 5-Injured, Unknown Severity*
- 0-No Injury*
- 6-Died Prior*
- 9-Unknown if Injured*
- 8-No Person in the Vehicle*

From 1999 to 2000 the priority was different: Unknown if Injured had priority over No Injury.

**SAS Name: MAX\_VSEV [V90Z.]**

#### Attribute Codes 1988-Later

- 0 = No Injury
- 1 = Possible Injury
- 2 = Non-incapacitating Injury
- 3 = Incapacitating Injury
- 4 = Fatal Injury
- 5 = Injured Severity Unknown
- 6 = Died Prior
- 8 = No Person in the Vehicle
- 9 = Unknown

### V90I Imputed Maximum Injury Severity in Vehicle

---

**Definition:** This imputed variable has the same definition and element values as **Maximum Injury Severity in Vehicle**, excluding value "9" for unknown maximum injury severity. The variable is derived from the *Hot-deck Imputed Injury Severity (P9)* in the Person data set.

**SAS Name: MXVSEV\_I [V90Z.]**

**1988 -Later**

## Variable Definitions and Codes – Vehicle File

---

### V91 Number Injured in Vehicle

---

**Definition:** Derived by counting all the persons with *Injury Severity (P9)* of (1, 2, 3, 4, 5, or 9) in a vehicle. This count includes fatally injured occupants.

**SAS Name:** NUM\_INJV [A91N.]

#### Attribute Codes 1988-Later

- 0 = No Person Injured in Vehicle
- 1-97 = (Actual Number)
- 98 = No Person in the Vehicle
- 99 = All Persons in the Vehicle are Unknown if Injured

### V91I Imputed Number Injured in Vehicle

---

**Definition:** This imputed variable has the same definition and element values as ***Number Injured in Vehicle***, excluding values 98 (No person in the Vehicle) and 99 (Unknown if Injured). This variable is derived from the *Hot-deck Imputed Injury Severity (P9)* variable.

**SAS Name:** NUMINJ\_I

**1988 –Later**

## Variable Definitions and Codes – Vehicle File

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### V92 Driver Drinking in Vehicle

---

**Definition:** Reports alcohol use by driver of the vehicle. The variable is derived from the police-reported alcohol involvement variable in the Person data set.

In 1988, this variable reported alcohol use by any occupant in the vehicle, including the driver. In 1989, this variable was changed from *Alcohol Involved in Vehicle* to *Driver Drinking in Vehicle* to report alcohol use by the driver.

**SAS Name:** VEH\_ALCH [V92Z.]

#### 1988-Later

1 = Alcohol Involved  
2 = No Alcohol  
8 = No Driver Present  
9 = Unknown

### V92I Imputed Driver Drinking in Vehicle

---

**Definition:** This imputed variable is derived from the *Hot-deck Imputed Police Reported Alcohol Involvement (P11)* variable in the Person data set. Attribute code 9 for unknown driver drinking in vehicle was imputed and attribute code 8 was converted to attribute code 2.

**SAS Name:** V\_ALCH\_I [V92Z.]

#### 1988-Later

## **Variable Definitions and Codes – Vehicle File**

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### **D01 Driver Presence**

---

**Definition:** This variable identifies driverless motor vehicles in transport.

**SAS Name:** DR\_PRES [D1N.]

#### **Attribute Codes 1988-Later**

0 = Unattended Vehicle (Driverless, or No Driver Involved)

1 = Driver Operated Vehicle

2 = Hit and Run

9 = Unknown Driver Presence

## Variable Definitions and Codes – Vehicle File

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### D02 Violations Charged

---

**Definition:** Indicates which violations are charged to drivers.

If a driver has more than one violation the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple violations for a driver are available in the Violatn data set (SAS variable MVIOLATN).

**SAS Name: VIOLATN [D2Z.]**

1988-1989	1990-1998	1999	2000-Later
0	0	0	0 None
1	1	1	1 Alcohol or Drugs
2	2	2	2 Speeding
3	3	3	3 Alcohol or Drugs and Speeding
4	4	4	4 Reckless Driving
5	5	5	5 Driving With a Suspended or Revoked License
6	6	6	6 Failure to Yield Right-of-Way
7	7	7	7 Running a Traffic Signal or Stop Sign
	50	50	50 Hit & Run (and No Information)
			95 No Driver Present
		96	96 Not Reported
	97	97	97 Violation Charged-No Details
8	98	98	98 Other Violation
9	99	99	99 Unknown if Charged

### D02I Univariate Imputed Violations Charged

---

**Definition:** This imputed variable has the same definition and element values as **Violations Charged**, excluding values 99 for Unknown if Charged and 96 for Not Reported. Prior to 2004 it had the same values excluding 99 Unknown if Charged. (See **Understanding the GES Imputation Process** section of this manual.)

**1988 -Later**

**SAS Name: VLTN\_I [D2Z. ]**



### D03 Driver Physical/Mental Impairment

---

**Definition:** Identifies driver's physical or mental impairment that may have contributed to the cause of the accident. If two or more impairments apply, the lowest of the attribute codes is chosen.

In 1988 and 1989 a distinction was made between impairment for drivers and for non-motorists; the variable for driver impairment was in the Vehicle data set and the variable for non-motorist impairment was in the Person data set. In 1990 these variables were replaced by a single variable in the Person data set: *Person's Physical Impairment* (P18) was used for both driver and non-motorist impairment. See discussion of *Person's Physical Impairment* (P18) for further changes.

**SAS Name: DR\_IMPMT [D3Z.]**

#### Attribute Codes 1988-1989

- 0 = No Impairments
- 1 = Drowsy, Sleepy, Asleep, Fatigued
- 2 = Ill, Blackout
- 3 = Emotional (e.g., Depression, Angry, Disturbed)
- 4 = Drugs-Medication
- 5 = Other Drugs (Marijuana, Cocaine, etc.)
- 6 = Restricted to Wheelchair
- 7 = Impaired Due to Previous Injury
- 8 = Deaf
- 50 = Hit-and Run Vehicle
- 97 = Physical/Mental Impairment-No Details
- 98 = Other Physical/Mental Impairment
- 99 = Unknown Physical/Mental Condition

## Variable Definitions and Codes – Vehicle File

### D04 Driver's Vision Obscured By

**Definition:** Identifies visual circumstances that may have contributed to the cause of the crash. In 2004 the codes 93-Not on PAR and 94-Not Coded replaced 96-Not Reported. Not on PAR is coded if no block exists on the PAR for reporting obscured driver vision and no other information is available. Not Coded is used if there is a specific location on the police report for obscured driver vision but the investigating officer fails to make an assessment, and there is no other information available. If a driver's vision is obscured by more than one item, the lowest of the attribute codes is chosen.

Starting in 2002 multiple obstructions for a driver are available in the Vision data set (SAS variable MVISOBSC).

**SAS Name:** VIS\_OBSC [D4N.]

#### Attribute Codes:

1988- 1991	1992- 1998	1999	2000- 2003	2004	
0	0	0	0	0	No Obstruction
1					Rain, Snow, Fog, Smoke, Sand, Dust
	1	1	1	1	Rain, Snow, Smoke, Sand, Dust
2	2	2	2	2	Reflected Glare, Bright Sunlight, Headlights
3	3	3	3	3	Curve or Hill
4	4	4	4	4	Building, Billboard, or Other Design Features (Includes Signs Embankment)
5	5	5	5	5	Trees, Crops, Vegetation
6	6	6	6	6	Moving Vehicle (including load)
7	7	7	7	7	Parked Vehicle
8	8	8	8	8	Splash or Spray of Passing Vehicle
9	9	9	9	9	Inadequate Defrost or Defog System
10	10	10	10	10	Inadequate Lighting System
11	11	11	11	11	Obstruction Interior to Vehicle
12	12	12	12	12	External Mirrors
13	13	13	13	13	Head Restraints
14	14	14	14	14	Broken or Improperly Cleaned Windshield
15	15	15	15	15	Fog
50	50	50	50	50	Hit & Run Vehicle (And No Information)
				93	Not on PAR
				94	Not Coded
			95	95	No Driver Present
		96	96		Not Reported
97	97	97	97	97	Vision Obscured-No Details
98	98	98	98	98	Other Obstruction
99	99	99	99	99	Unknown Whether Vision was Obstructed

## Variable Definitions and Codes – Vehicle File

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### D05 Driver's Action

---

**Definition:** Indicates if the driver was avoiding, swerving, or sliding due to one of the following. If two or more actions were noted on the PAR, the lowest of the attribute codes was chosen.

In 1990 this variable was replaced with *Driver Maneuvered to Avoid* (D6).

**SAS Name : DR\_ACT [D5Z.]**

#### Attribute Codes 1988-1989

- 0 = Not Avoiding, Swerving, or Sliding
- 1 = Severe Crosswind
- 2 = Wind from Passing Truck
- 3 = slippery or Loose Surface
- 4 = Tire Blow-out or Flat
- 5 = Debris or Objects in Road
- 6 = Ruts, Holes, Bumps in Road
- 7 = Animals in Road
- 8 = Vehicle in Road
- 9 = Phantom Vehicle
- 10 = Pedestrian, Pedalcyclist, or Other Non-motorist in Road
- 11 = Water, Snow, Oil slick in Road
- 50 = Hit-and Run Vehicle
- 97 = Avoiding, Swerving, or Sliding-No Details
- 98 = Other Cause
- 99 = Unknown Action

## Variable Definitions and Codes – Vehicle File

---

### D06 Driver Maneuvered to Avoid

---

**Definition:** Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash. If a driver made more than one avoidance maneuver, the lowest of the attribute codes shown below is chosen.

Starting in 2002 multiple maneuvers for a driver are available in the Maneuver data set (SAS variable MDRMANAV).

**SAS Name:** DRMAN\_AV [D6N.]

#### Coding Attributes

1990- 1998	1999	2000- 2001	2002- 2003	2004	
0	0	0	0	0	Driver Did Not Maneuver To Avoid
1	1	1	1	1	Object In Road
2	2	2	2	2	Poor Road Conditions (Puddle, Ice, PoHole, etc.)
3	3	3	3	3	Animal In Road
4	4	4	4	4	Vehicle In Road
5	5	5	5	5	Pedestrian, Pedalcyclist, or Other Non-Motorist in the Road
50	50	50	50	50	Hit & Run (And No Information)
				92	Phantom Vehicle
			93	93	Not on PAR
			94	94	Not Coded
		95	95	95	No Driver Present
	96	96			Not Reported
97	97	97	97	97	Avoidance Maneuver-No details
99	99	99	99	99	Unknown If Driver Maneuvered To Avoid

## Variable Definitions and Codes – Vehicle File

### D07 Driver Distracted By

**Definition:** Identifies a distraction which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external). If a driver had more than one distraction, the lowest of the attribute codes is chosen.

Starting in 2002 multiple distractions for a driver are available in the Distract data set (SAS variable MDRDSTRD).

**SAS Name:** DR\_DSTRD [D7N.]

#### Attribute Codes

##### 1990-1998

0 = Not Distracted	5 = Other Crash ("Rubbernecking")
1 = Passengers, Occupants	6 = Other External Distractions
2 = Vehicle Instrument Display (Radio, CB, Heating)	50 = Hit & Run (And No Information)
3 = Phone	97 = Distractions-No Details
4 = Other Internal Distractions	99 = Unknown if Distracted

1999	2000- 2001	2002- 2003	2004	
0	0	0	0	Not distracted
1	1	1	1	Looked but did not see
3	3	3	3	By other occupants
4	4	4	4	By moving object in vehicle
5	5	5	5	While talking or listening to phone
6	6	6	6	While dialing phone
7	7	7	7	While adjusting climate control
8	8	8	8	While adjusting radio, cassette or CD
9	9	9	9	While using other devices integral to vehicle
10	10	10	10	While using or reaching for other devices
11	11	11	11	Sleepy or fell asleep
12	12	12	12	Distracted by outside person or object
13	13	13	13	Eating or drinking
14	14	14	14	Smoking related
			92	Distraction or inattention, details unknown
		93	93	Not on PAR
		94	94	Not coded
	95	95	95	No driver present
96	96			Not reported
97	97	97	97	Inattentive or lost in thought
98	98	98		Other distraction or inattention
			98	Other distraction
99	99	99	99	Unknown if distracted

## Variable Definitions and Codes – Vehicle File

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### D08 Driver's Zip Code

---

**Definition:** The zip code of the driver's address as listed on the police accident report.

This variable was added to the Vehicle data set in 1992. It changed from numeric to character in 2002 and the SAS name changed from DR\_ZIP\_C to DZIPCODE.

**SAS Name:** DR\_ZIP\_C [D8N.]

#### Attribute Codes

1992-1999	2000-2001
numeric	numeric

0	= Not Resident of U.S. or territories or driver not present
0	= Not Resident of U.S. or territories
1-99998	1-99997 = Zip Code
	99998 = No Driver Present
99999	99999 = Unknown

**SAS Name:** DZIPCODE [\$D8N. ]

#### Attribute Codes

**2002 -Later**  
**character** (length 5)

00000	= Not Resident of U.S. or territories
00001-99997	= Zip Code
99998	= No Driver Present
99999	= Unknown

## **Variable Definitions and Codes – Vehicle File**

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### **D09    Speed Related**

---

**Definition:** This variable indicates whether speed is a contributing factor to the cause of the crash.

This variable was added to the Vehicle data set in 1997.

**SAS Name:   SPEEDREL [D9N.]**

#### **Attribute Codes**

##### **1997-1999    2000 – Later**

0	0 = No
1	1 = Yes
	8 = No Driver Present
9	9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

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### **V A11 Trafficway Flow**

---

**Definition:** Indicates whether or not the roadway was divided.

This variable has been coded at the Accident level and included in Accident data set (SAS variable TRAF\_WAY) since 1988. Starting in 2002 the trafficway flow for each vehicle in a crash is available in the Vehicle data set.

**SAS Name: VTRAFWAY [A11Z.]**

#### **Attribute Codes**

##### **2002      2003-Later**

	0 = Not Physically Divided -- Center 2-way Left Turn Lane
1	1 = Not Physically Divided -- Two Way Trafficway
2	2 = Divided Highway (Median Strip, Barrier)
3	3 = One Way Trafficway
9	9 = Unknown



### **V A12 Number of Travel Lanes**

---

**Definition:** Indicates the number of lanes of travel. If a divided trafficway, the number of travel lanes lanes only in the direction of travel of the vehicle are counted. If an undivided trafficway, all travel lanes are counted regardless of their direction of travel.

This variable has been coded at the Accident level and been on the Accident data set (SAS variable NUM\_LAN) since 1988. Starting in 2002 the number of lanes for each vehicle in a crash is available in the Vehicle data set.

**SAS Name: VNUM\_LAN [A12Z.]**

#### **Attribute Codes 2002 - Later**

- 1 = One Lane
- 2 = Two Lanes
- 3 = Three Lanes
- 4 = Four Lanes
- 5 = Five Lanes
- 6 = Six Lanes
- 7 = Seven or More Lanes
- 9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V A13 Roadway Alignment**

---

**Definition:** Horizontal alignment of roadway in the immediate vicinity of the first harmful event.

This variable has been coded at the Accident level and included in Accident data set (SAS variable ALIGN) since 1988. Starting in 2002 the roadway alignment for each vehicle in a crash is available in the Vehicle data set.

**SAS Name: VALIGN [A13Z.]**

#### **Attribute Codes 2002 - Later**

1 = Straight  
2 = Curve  
9 = Unknown

## **Variable Definitions and Codes – Vehicle File**

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### **V A14 Roadway Profile**

---

**Definition:** Vertical alignment of roadway in the immediate vicinity of the first harmful event.

This variable has been coded at the Accident level and included in Accident data set (SAS variable PROFILE) since 1988. Starting in 2002 the roadway profile for each vehicle in a crash is available in the Vehicle data set.

**SAS Name: VPROFILE [A14Z.]**

#### **Attribute Codes 2002 - Later**

- 1 Level
- 2 Grade
- 3 Hillcrest
- 8 Sag
- 9 Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V A15 Roadway Surface Condition**

---

**Definition:** Condition of road surface at the time of the crash.

This variable has been coded at the Accident level and included in Accident data set (SAS variable SUR\_COND) since 1988. Starting in 2002 the roadway surface condition for each vehicle in a crash is available in the Vehicle data set.

**SAS Name: VSURCOND [A15Z.]**

#### **Attribute Codes 2002 - Later**

- 1 = Dry
- 2 = Wet
- 3 = Snow or Slush
- 4 = Ice
- 5 = Sand, Dirt, Oil
- 8 = Other
- 9 = Unknown

## Variable Definitions and Codes – Vehicle File

---

### V A16 Traffic Control Device - Vehicle

---

**Definition:** Indicates whether or not a traffic control device was present for the vehicle and the type of traffic control device.

If a vehicle is controlled by more than one device, the device coded is based on the following priority:

- 51 - Officer, Crossing Guard, Flagman, etc
- The lowest numbered device shown below
- 0 - No traffic control device.

This variable has been coded at the Accident level and has been included in the Accident data set (SAS variable TRAF\_CON) since 1988. Starting in 2002 a selected traffic control device for each vehicle in a crash is available in the Vehicle data set, all traffic control devices for a vehicle are in the Trafcon data set (SAS variable MTRAFCON), and all traffic control devices for cyclists are in the Biketraf data set (SAS variable BTRAFCON).

**SAS Name: VTRAFCON [A16N.]**

#### Attribute Codes 2002 - Later

0 = No Controls

##### *Not at Railroad Grade Crossing*

##### *Trafficway Traffic Signals:*

- 01 = Traffic Control Signal (on colors)
- 04 = Flashing Traffic Control Signal or Flashing Beacon
- 08 = Other Traffic Signal
- 09 = Unknown Traffic Signal

##### *Regulatory, School Zone Signs:*

- 21 = Stop Sign
- 22 = Yield Sign
- 23 = School Zone Related Sign
- 28 = Other Sign
- 29 = Unknown Sign

##### *Warning Signs:*

- 40 = Advisory Speed Sign
- 41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
- 42 = Warning Sign For Road Construction
- 43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
- 49 = Unknown Type Warning

##### *Miscellaneous, Not at Railroad Crossing:*

- 51 = Officer, Crossing Guard, Flagman, etc

##### *At Railroad Grade Crossing:*

- 61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
- 62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

##### *Other:*

- 97 = Traffic Control Present-No Details
- 98 = Other Traffic Control (whether or not at RR Grade Crossing)
- 99 = Unknown

## **Variable Definitions and Codes – Vehicle File**

---

### **V A18 Speed Limit**

---

**Definition:** Posted speed limit in miles per hour.

This variable has been coded at the Accident level and included in Accident data set (SAS variable SPD\_LIM) since 1988. Starting in 2002 the speed limit for each vehicle in a crash is available in the Vehicle data set.

**SAS Name:** VSPD\_LIM [A18Z.]

#### **Attribute Codes 2002 - Later**

- 0 = No Statutory Limit (parking lot, alley, etc.)
- 5-75 = (Actual Speed Limit)
- 99 = Unknown

## Variable Definitions and Codes – Distract File

---

### The Distract Data Set

The Distract data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Distract data set with the Vehicle data set. It also contains:

#### **M\_D07Driver Distracted By**

---

**Definition:** Identifies all distractions which may have influenced driver performance and contributed to the cause of the crash. The distraction can be either inside the vehicle (internal) or outside the vehicle (external).

This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable DR\_DSTRD) since 1990. Starting in 2002 multiple distractions for each driver are available in the Distract data set.

**SAS Name: MDRDSTRD [D7NZ.]**

#### **Attribute Codes**

##### **2002–2003 2004**

0	0	Not Distracted
1	1	Looked but did not see
3	3	By other occupants
4	4	By moving object in vehicle
5	5	While talking or listening to phone
6	6	While dialing phone
7	7	While adjusting climate control
8	8	While adjusting radio, cassette or CD
9	9	While using other devices integral to vehicle
10	10	While using or reaching for other devices
11	11	Sleepy or fell asleep
12	12	Distracted by outside person or object
13	13	Eating or drinking
14	14	Smoking related
	92	Distraction or inattention, details unknown
93	93	Not on PAR
94	94	Not Coded
95	95	No driver present
97	97	Inattentive or lost in thought
98		Other distraction or inattention
	98	Other distraction
99	99	Unknown if Distracted

### **The Factor Data Set**

The Factor data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Factor data set with the Vehicle data set. It also contains:

#### **M V12Vehicle Contributing Factors**

---

**Definition:** Indicates which vehicle factors may have contributed to the cause of the crash.

This variable has been coded at the Vehicle level, and included in Vehicle/Driver data set (SAS variable FACTOR), since 1995. Starting in 2002 multiple factors for each vehicle are available in the Factor data set.

**SAS Name: MFACTOR [V12N.]**

#### **Attribute Codes 2002 - Later**

- 0 = None
- 1 = Tires
- 2 = Brake System
- 3 = Steering System-Tie Rod, Kingpin, Ball Joint, etc.
- 4 = Suspension-Springs, Shock Absorbers, McPherson Struts, Control Arms, etc.
- 5 = Power Train-Universal Joint, Drive Shaft, Transmission, etc.
- 6 = Exhaust System
- 7 = Headlights
- 8 = Signal Lights
- 9 = Other Lights
- 10 = Wipers
- 11 = Wheels
- 12 = Mirrors
- 13 = Driver Seating and Control
- 14 = Body, Doors
- 15 = Trailer Hitch
- 50 = Hit-and-Run Vehicle
- 97 = Vehicle Contributing Factors-No Details
- 98 = Other Vehicle Contributing Factors
- 99 = Unknown if Vehicle Has Contributing Factors



### The Maneuver Data Set

The Maneuver data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Maneuver data set with the Vehicle data set. It also contains:

#### **M\_D06 Driver Maneuvered to Avoid**

---

**Definition:** Identifies an action taken by the driver to avoid something or someone in the road. The maneuver may have subsequently contributed to the cause of the crash.

This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable DR\_DSSTRD) since 1990. Starting in 2002 multiple maneuvers made by each driver are available in the Maneuver data set.

**SAS Name: MDRMANAV [D6NZ.]**

#### **Attribute Codes**

##### **2002-2003    2004**

0	0	Driver Did Not Maneuver To Avoid
1	1	Object In Road
2	2	Poor Road Conditions (Puddle, Ice, Pot Hole, etc.)
3	3	Animal In Road
4	4	Vehicle In Road
5	5	Pedestrian, Pedalcyclist, or Other Non-Motorist In Road
50	50	Hit & Run (And No Information)
	92	Phantom Vehicle
93	93	Not on PAR
94	94	Not Coded
95	95	No Driver Present
97	97	Avoidance Maneuver-No details
99	99	Unknown If Driver Maneuvered To Avoid

### The Trafcon Data Set

The Trafcon data set includes the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Trafcon data set with the Vehicle data set. It also includes:

#### **MV A16      Traffic Control Device - Vehicles**

---

**Definition:** Indicates whether or not traffic control devices were present for a motor vehicle and the type of traffic control device.

This variable has been coded at the Accident level and included in Accident data set (SAS variable TRAF\_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon data set and each traffic control device for a cyclist is in the Biketraf data set. Also starting in 2002 a single, selected, traffic control device for a vehicle is available on the Vehicle data set (SAS variable VTRAFCON).

**SAS Name: MTRAFCON [A16N.]**

#### **Attribute Codes 2002 - Later**

0 = No Controls

##### *Not at Railroad Grade Crossing*

##### *Trafficway Traffic Signals:*

- 01 = Traffic Control Signal (on colors)
- 04 = Flashing Traffic Control Signal or Flashing Beacon
- 08 = Other Traffic Signal
- 09 = Unknown Traffic Signal

##### *Regulatory, School Zone Signs:*

- 21 = Stop Sign
- 22 = Yield Sign
- 23 = School Zone Related Sign
- 28 = Other Sign
- 29 = Unknown Sign

##### *Warning Signs:*

- 40 = Advisory Speed Sign
- 41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
- 42 = Warning Sign For Road Construction
- 43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
- 49 = Unknown Type Warning

##### *Miscellaneous, Not at Railroad Crossing:*

- 51 = Officer, Crossing Guard, Flagman, etc

##### *At Railroad Grade Crossing:*

- 61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
- 62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

##### *Other:*

- 97 = Traffic Control Present-No Details
- 98 = Other Traffic Control (whether or not at RR Grade Crossing)
- 99 = Unknown

### **The Violatn Data Set**

The Violatn data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Violatn data set with the Vehicle data set. It also contains:

#### **M\_D02Violations Charged**

---

**Definition:** Indicates which violations are charged to drivers.

This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable VIOLATN) since 1988. Starting in 2002 all violations charged to a driver are available in the Violatn data set.

**SAS Name:** MVIOLATN [D2NZ.]

#### **Attribute Codes 2002 - Later**

- 0 = None
- 1 = Alcohol
- 2 = Drugs
- 3 = Speeding
- 4 = Reckless Driving
- 5 = Driving With a Suspended or Revoked License
- 6 = Failure to Yield Right-of-Way
- 7 = Running a Traffic Signal or Stop Sign
- 50 = Hit & Run (and No Information)
- 95 = No Driver Present
- 96 = Not Reported
- 97 = Violation Charged-No Details
- 98 = Other Violation
- 99 = Unknown if Charged

### The Vision Data Set

The Vision data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Vision data set with the Vehicle data set. It also contains:

#### **M D04Driver's Vision Obscured By**

---

**Definition:** Identifies visual circumstances that may have contributed to the cause of the crash. In 2004 the codes 93-Not on PAR and 94-Not Coded replaced 96-Not Reported. Not on PAR is coded if no block exists on the PAR for reporting obscured driver vision and no other information is available. Not Coded is used if there is a specific location on the police report for obscured driver vision but the investigating officer fails to make an assessment, and there is no other information available.

This variable has been coded at the Driver level and included in Vehicle/Driver data set (SAS variable VIS\_OBSC) since 1988. Starting in 2002 all visual obstructions for a driver are available in the Vision data set.

**SAS Name: MVISOBSC [D4NZ.]**

#### **Attribute Codes**

<b>2002-2003</b>	<b>2004</b>	
0	0	No Obstruction
1	1	Rain, Snow, Smoke, Sand, Dust
2	2	Reflected Glare, Bright Sunlight, Headlights
3	3	Curve or Hill
4	4	Building, Billboard, or Other Design Features (Includes Signs, Embankment)
5	5	Trees, Crops, Vegetation
6	6	Moving Vehicle (including load)
7	7	Parked Vehicle
8	8	Splash or Spray of Passing Vehicle
9	9	Inadequate Defrost or Defog System
10	10	Inadequate Lighting System
11	11	Obstruction Interior to Vehicle
12	12	Mirrors
13	13	Head Restraints
14	14	Broken or Improperly Cleaned Windshield
15	15	Fog
50	50	Hit & Run Vehicle (And No Information)
	93	Not on PAR
	94	Not Coded
95	95	No Driver Present
96		Not Reported
97	97	Vision Obscured-No Details
98	98	Other Obstruction
99	99	Unknown Whether Vision was Obstructed

### The Person Data Set

The Person data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and VEHNO. CASENUM and VEHNO should be used to merge the Person data set with the Vehicle data set.

In the Person data set, VEHNO equals 0 for non-motorists (PER\_TYPE = 3,4,5,6 or 8). The Person data set also contains:

#### **P02 Person Number**

---

**Definition:** Assigned to each occupant, pedestrian, or non-motorists involved in the crash. The assumed driver of a hit-and-run vehicle is coded 1. This variable is computer assigned.

**SAS Name: PERNO**

**1988-Later**

#### **P03 Person Type**

---

**Definition:** Indicates the role of the person in the vehicle.

**SAS Name: PER\_TYPE [P3Z.]**

**Attribute Codes 1988-Later**

*Motorists*

- 1 = Driver of a Motor Vehicle in Transport
- 2 = Passenger of a Motor Vehicle in Transport
- 9 = Unknown Occupant Type in a Motor Vehicle in Transport

*Non-Motorists-Occupant*

- 3 = Occupant of a Motor Vehicle Not in Transport
- 4 = Occupant of a Non-Motor Vehicle Transport Device

*Non-Motorists-Non-Occupant*

- 5 = Pedestrian
- 6 = Cyclist (Pedalcyclist)
- 8 = Other or Unknown Non-Occupant

## Variable Definitions and Codes – Person File

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### P04 Seating Position

---

**Definition:** Indicates the location of the occupants in the vehicle. More than one person can be assigned the same seat position, however this is coded only when a person is sitting on someone's lap.

**SAS Name:** SEAT\_POS [P4N.]

#### Attribute Codes

1988-1991	1992-2002	2003-Later
00 = Non-motorist	00	00 = Non-motorist
11 = Front Seat-Left Side (Driver's Side)	11	11 = Front Seat-Left Side (Driver's Side)
12 = Front Seat-Middle	12	12 = Front Seat-Middle
13 = Front Seat-Right Side	13	13 = Front Seat-Right Side
18 = Front Seat-Other	18	14 = Front Seat-Other
19 = Front Seat-Unknown	19	19 = Front Seat-Unknown
21 = Second Seat-Left Side	21	21 = Second Seat-Left Side
22 = Second Seat-Middle	22	22 = Second Seat-Middle
23 = Second Seat-Right Side	23	23 = Second Seat-Right Side
28 = Second Seat-Other	28	28 = Second Seat-Other
29 = Second Seat-Unknown	29	29 = Second Seat-Unknown
	31	31 = Third Seat-Left Side
	32	32 = Third Seat-Middle
	33	33 = Third Seat-Right Side
	38	38 = Third Seat-Other
	39	39 = Third Seat-Unknown
		41 = Fourth Seat-Left Side
		42 = Fourth Seat-Middle
		43 = Fourth Seat-Right Side
		48 = Fourth Seat-Other
		49 = Fourth Seat-Unknown
30 = Sleeper Section of Cab (Truck)	50	50 = Sleeper Section of Cab (Truck)
40 = Other Passenger in Passenger or Cargo Area	51	51 = Other Passenger in Passenger or Cargo Area
50 = Trailing Unit	52	52 = Trailing Unit
60 = Riding on Vehicle Exterior	53	53 = Riding on Vehicle Exterior
99 = Unknown Seating Position	99	99 = Unknown Seating Position

### P04H Hot-deck Imputed Seating Position

---

**Definition:** This imputed variable has the same definition and element values as **Seating Position**, excluding 18, 19, 28, 29, 38, 39, 48, 49 and 99 unknown seating position. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name:** SEAT\_H [P4N.]

**1988-Later**

## Variable Definitions and Codes – Person File

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### P05 Safety Equipment Use

---

**Definition:** Indicates the occupant's use of available vehicle restraints. The presence of an air bag system does not mean that there are no active belts present.

This variable was dropped from the Person data set in 1990 and was replaced with *Restraint System Use* (P15).

**SAS Name:** SAF\_EQMT [P5Z.]

**1988-1989**

- 0 = Non-motorist
- 1 = Child Restraint Used
- 2 = Manual Lap Belt Used
- 3 = Manual Shoulder Belt Only Used
- 4 = Manual Shoulder and Lap Belt Used
- 5 = Automatic Belt Used
- 6 = Deployed Air Bag
- 7 = Motorcycle Helmet Used
- 8 = Other Restraint / Safety Equipment Used
- 9 = Restraint Used-Type Unknown
- 10 = None Used
- 11 = None Available
- 99 = Unknown Use or Availability

## Variable Definitions and Codes – Person File

---

### P06 Ejection

---

**Definition:** Refers to occupants being totally or partially thrown from the vehicle as a result of an impact or rollover.

**SAS Name:** EJECT [P6N.]

#### Attribute Codes

1988- 1989	1990- 1994	1995- 1998	1999- 2000	2001- 2003	2004	
0	0	0	0	0	0	Not Ejected
1		1	1	1	1	Totally Ejected
	1					Ejected (Partial or total)
2		2	2	2	2	Partially Ejected
					5	Not on PAR
					6	Not Coded
7		7		7	7	Ejected – Unknown Degree
				8	8	Not Applicable
9	9	9	9	9	9	Unknown

### P06I Univariate Imputed Ejection

---

**Definition:** This imputed variable has the same definition and element values as **Ejection**, excluding 9 “Unknown if Ejected,” 5 “Not on PAR,” and 6 “Not Coded.” Prior to 2004 the only difference in the imputed variable was that 9, “Unknown if Ejected” was excluded. (See **Understanding the GES Imputation Process** section of this manual.)

**SAS Name:** EJECT\_I [P6N.]

**1988 -Later**



## Variable Definitions and Codes – Person File

---

### P07 Age

---

**Definition:** Indicates the person's age at the time of the crash, with respect to the person's last birthday.

**SAS Name:** AGE [P7Z.]

#### Attribute Codes

##### 1988-2000

0 = Up to One Year  
1-96 = Years of Age  
97 = 97 Years or Older  
99 = Unknown

##### 2001-Later

0 = Up to One Year  
1-998 = Years of Age  
999 = Unknown

### P07H Hot-deck Imputed Age

---

**Definition:** This imputed variable has the same definition and element values as **Age**, excluding "99" or "999" for unknown age. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** AGE\_H [P7Z.]

#### 1988 -Later

## Variable Definitions and Codes – Person File

---

### P08 Sex

---

**Definition:** Indicates the police reported sex for this person

**SAS Name:** SEX [P8Z.]

#### Attribute Codes 1988-Later

1 = Male  
2 = Female  
9 = Unknown

### P08H Hot-deck Imputed Sex

---

**Definition:** This imputed variable has the same definition and element values as **Sex**, excluding "9" for unknown sex. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** SEX\_H [P8Z.]

1988 -Later

## Variable Definitions and Codes – Person File

---

### P09 Injury Severity

---

**Definition:** Indicates the police reported injury severity for this person.

**SAS Name:** INJ\_SEV [P9Z.]

#### Attribute Codes 1988-Later

0 = No Injury (O)  
1 = Possible Injury (C)  
2 = Non-incapacitating Injury (B)  
3 = Incapacitating Injury (A)  
4 = Fatal Injury (K)  
5 = Injured, Severity Unknown (U)  
6 = Died Prior to Crash  
9 = Unknown if Injured

### P09H Hot-deck Imputed Injury Severity

---

**Definition:** This imputed variable has the same definition and element values as *Injury Severity*, excluding value "9" for unknown if injured. (See *Understanding the GES Imputation Process* section of this manual.)

**SAS Name:** INJSEV\_H [P9Z.]

**1988 -Later**

## **Variable Definitions and Codes – Person File**

---

### **P10 Taken to Hospital or Treatment Facility**

---

**Definition:** Indicates whether persons involved in the crash were transported to a hospital or treatment facility.

**SAS Name:** HOSPITAL [P10Z.]

#### **Attribute Codes 1988-Later**

0 = No

1 = Yes

9 = Unknown

## Variable Definitions and Codes – Person File

---

### P11 Police-Reported Alcohol Involvement

---

**Definition:** Indicates that the person (drivers of in-transport motor vehicles and non-motorists only) had consumed an alcoholic beverage. This variable does not indicate that alcohol was a cause of the crash. If a PAR indicates that opened or unopened alcohol bottles were found in the vehicle, then this information **does not** by itself constitute involvement.

**SAS Name:** PER\_ALCH [P11NZ.]

#### Attribute Codes

1988-1989 1990-1998 1999-2001 2002 - Later

0		1	1	No (Alcohol Not Involved)
	0			Alcohol Not Involved or N/A
		0	0	Not Applicable
1	1	2	2	Yes (Alcohol Involved)
			6	Not on PAR
			7	Not Coded
	7			Alcohol and/or Drugs Involved
8	8	8		Not Reported
9	9	9	9	Unknown (Police-Reported)

### P11H Hot-deck Imputed Police-Reported Alcohol Involvement

---

**Definition:** The definition and element values are the same as **Police-Reported Alcohol Involvement** with the following exceptions: From 1988 to 1993 the imputed variable excludes the attribute code 9 (Unknown – Police Reported) and any person who was coded 8 (Not Reported) for PER\_ALCH was coded No Alcohol Involved for ALCH\_H. Beginning in 1994 the methodology changed for the attribute 8 – rather than converting it to No Alcohol Involved it was imputed. The SAS name for the imputed variable changed from ALCH\_H to PERALC\_H in 1994 to reflect this change. In 2002 the PER\_ALCH code 8 was replaced by 6 and 7. So from 2002 onward codes 6 and 7, as well as 9, are imputed. (See **Understanding the GES Imputation Process** section of this manual.)

1988 – 1993

1994 –Later

**SAS Name:** ALCH\_H [P11Z.]

**SAS Name:** PERALC\_H [P11NZ.]

## Variable Definitions and Codes – Person File

---

### P12 Non-motorist's Physical/Mental Condition

---

**Definition:** Indicates the physical/mental condition for non-motorists. If the person is a driver or occupant of a motor vehicle in transport, they are coded as 0. When two or more circumstances apply, the attribute with the lowest numerical value is coded.

In 1990, this variable was dropped and replaced with *Person's Physical Impairment* (P18).

**SAS Name:** PHY\_COND [P12Z.]

#### Attribute Codes 1988-1989

- 0 = Not Applicable-Driver or Occupant of Motor Vehicle in Transport  
No Physical/Mental Conditions-Non-occupant
- 1 = Ill, Blackout
- 2 = Emotional (e.g. Depression, Angry, Disturbed)
- 3 = Drugs-Medication
- 4 = Other Drugs (e.g. Cocaine, Marijuana, etc.)
- 5 = Walking with Cane or Crutches
- 6 = Paraplegic or Restricted to Wheelchair
- 7 = Impaired Due to Previous Injury
- 8 = Deaf
- 9 = Blind
- 10 = No Known Physical/Mental Impairment\*
- 97 = Physical/Mental Impairment-No Details
- 98 = Other Physical/Mental Impairment
- 99 = Unknown Physical/Mental Condition

## **Variable Definitions and Codes – Person File**

---

### **P13 Non-motorist Location**

---

**Definition:** Reports the location of non-motorists at the time of impact. Non-motorists who are occupants of motor vehicles not in transport are coded with respect to the location of the vehicle.

**SAS Name: LOCATN [P13Z.]**

#### **Attribute Codes 1988-Later**

- 0 = Not Applicable-Driver or Occupant of M.V. in Transport
- 1 = Intersection-In Crosswalk
- 2 = Intersection-On Roadway
- 8 = Intersection-Other
- 9 = Intersection-Unknown Location
- 11 = Non-Intersection-In Crosswalk
- 12 = Non-Intersection-On Roadway
- 18 = Non-Intersection-Other
- 19 = Non-Intersection-Unknown Location
- 20 = In Crosswalk-Unknown if Intersection
- 98 = Other Location
- 99 = Unknown Location

## Variable Definitions and Codes – Person File

---

### P14 Person's Action

---

**Definition:** Person's actions are indicated for everyone involved in the crash except the driver of a motor vehicle in transport.

This variable was dropped from the Person data set in 1990 and was replaced with the variable *Non-motorist's Action* (P19).

**SAS Name: ACTION [P14Z.]**

#### Attribute Codes 1988-1989

0 = Not Applicable-Driver or, if non-driver, No Action

##### *Non-motorist Vehicle Operator:*

- 1 = Failing to have Lights on When Required
- 2 = Operating without Required Equipment
- 3 = Improper or Erratic Lane Changing
- 4 = Failure to Keep in Proper Lane or Running Off Road
- 5 = Making Improper Entry to or Exit from Trafficway
- 6 = Operating the Vehicle in Erratic, Reckless, Negligent Manner
- 7 = Failure of Yield Right of Way
- 8 = Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
- 9 = Making Other Improper Turns
- 10 = Driving on Wrong Side of Road

##### *Motor Vehicle Occupant:*

20 = Interfering with Driver

##### *Other Non-motorists:*

- 21 = Darting or Running into Road
- 22 = Improper Crossing of Roadway or Intersection (Jaywalking)
- 23 = Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
- 24 = Inattentive (Talking, Eating, etc..)
- 25 = Jogger
- 26 = Non-motorist Pushing Vehicle

98 = Other Action

99 = Unknown Action



## Variable Definitions and Codes – Person File

---

### P15 Restraint System Use

---

**Definition:** Police reported occupant use of available vehicle restraints (i.e., belts child safety seat, helmet, or automatic restraints). No distinction is made between manual or automatic restraint; to do so see *Restraint Type* (P16).

This variable replaced *Safety Equipment Use* (P5) in 1990. Starting in 1992 information on air bags is contained in the variable *Air Bag Availability/Function* (P21).

**SAS Name:** REST\_SYS [P15N.]

#### Attribute Codes:

##### 1990-1991

0 = None Used or Not Applicable  
1 = Lap/Shoulder Belt  
2 = Lap Belt  
3 = Shoulder Belt  
4 = Air Bag Deployed  
5 = Air Bag Deployed and Lap/Shoulder Belt  
6 = Child Safety Seat  
7 = Motorcycle Helmet  
8 = Restraint Used-Specifics Unknown or Other  
9 = Unknown if Used

##### 1992-1994

0 = None Used or Not Applicable  
1 = Lap/Shoulder Belt  
2 = Lap Belt  
3 = Shoulder Belt  
  
6 = Child Safety Seat  
7 = Motorcycle Helmet  
8 = Restraint Used-Specifics Unknown or Other  
9 = Unknown if Used

##### 1995-Later

0 = None Used or Not Applicable  
1 = Lap/Shoulder Belt  
2 = Lap Belt  
3 = Shoulder Belt  
5 = Motorcycle Helmet  
6 = Child Safety Seat  
7 = None Available  
8 = Restraint Used-Specifics Unknown or Other  
9 = Unknown if Used

## **Variable Definitions and Codes – Person File**

---

### **P16    Restraint Type**

---

**Definition:** Provides additional information about the restraint system coded in the variable *Restraint System Use* (P15), distinguishing between automatic and manual type devices used.

This variable was added to the Person Data set in 1990 and deleted in 1999.

**SAS Name: REST\_TYP [P16N.]**

#### **Attribute Codes 1990 – 1998**

0 = None Available or Not Applicable  
1 = Automatic (Passive)  
2 = Manual (Active)  
9 = Unknown Type

## Variable Definitions and Codes – Person File

---

### P17 Police-Reported Drug Involvement

---

**Definition:** Indicates that the person (drivers of in-transport motor vehicles and non-motorists only) had taken drugs. Involvement is not an indication that drugs were in any way cause of the crash, even though it may have been. If the PAR indicates that drugs were found in the vehicle, then this information does not by itself constitute involvement.

This variable was added to the Person data set in 1990.

**SAS Name:** PER\_DRUG [P17NZ since 1999, P17N. prior years]

**1990-1998 1999 2000-2001 2002 - Later**

0				Drugs Not Involved or Not Applicable
	1	0	0	Not Applicable
	0	1	1	Drugs Not Involved
1	2	2	2	Drugs Involved
			6	Not on PAR
			7	Not Coded
7				Drugs and/or Alcohol Involved
8	8	8		Not Reported
9	9	9	9	Unknown (Police-Reported)

## **Variable Definitions and Codes – Person File**

---

### **P18 Person's Physical Impairment**

---

**Definition:** Identifies physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash.

In 1990 this variable replaced *Non-Motorist's Physical / Mental Condition* (P12) in the Person data set and *Driver Physical/Mental Impairment* (D3) in the Vehicle data set.

If more than one impairment is noted on the Police Accident Report the lowest numbered code is selected. From 2002 on all impairments for a driver or non-motorist are available in the Impair data set (SAS variable MIMPAIR).

**SAS Name: IMPAIRMT [P18N.]**

#### **Attribute Codes 1990-Later**

- 0 = None
- 1 = Ill, Blackout
- 2 = Drowsy, Sleepy, Fell Asleep, Fatigued
- 3 = Requires Cane or Crutches
- 4 = Paraplegic or Restricted to Wheelchair
- 5 = Impaired Due to Previous Injury
- 6 = Deaf
- 7 = Blind
- 97 = Physical Impairment-No Details
- 98 = Other Physical Impairments
- 99 = Unknown if Physically Impaired

## Variable Definitions and Codes – Person File

---

### P19 Non-Motorist Action

---

**Definition:** Identifies circumstances (actions) that may have contributed to the cause of the crash. The actions coded pertain to non-motorists only [Person Type (P03) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian, 6 (Pedalcyclist) or 8"(Other or Unknown)].

If more than one action is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all actions for a non-motorist are available in the Nmacion data set (SAS variable MACTION).

**SAS Name: ACTION [P19N.]**

#### Attribute Codes:

##### 1990-1991 1992-Later

0	0	No Action
		<i>Non-Motorist Vehicle Operator:</i>
1	1	Failing to Have Lights on When Required
2	2	Operating without Required Equipment
3	3	Improper or Erratic Lane Changing
4	4	Failure to Keep in Proper Lane or Running Off Road
5	5	Making Improper Entry to or Exit from Trafficway
6	6	Operating the Vehicle in Erratic, Reckless, Negligent Manner
7	7	Failure to Yield Right of Way
8	8	Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
9	9	Making Other Improper Turn
10	10	Driving on Wrong Side of Road
		<i>Other Non-motorist:</i>
21	21	Darting or Running into Road
22	22	Improper Crossing of Roadway or Intersection (Jaywalking)
23		Walking/Riding with or Against Traffic, Playing, Working, Sitting, Lying, Standing in Roadway
24	24	Inattentive (Talking, Eating, etc.)
25	25	Jogging
26	26	Non-Motorist Pushing Vehicle
	27	Walking with Traffic
	28	Walking Against Traffic
	29	Playing, Working, Sitting, Lying, Standing, Etc. In Roadway
98	98	Other Action
99	99	Unknown Action

## Variable Definitions and Codes – Person File

---

### P20 Non-Motorist Safety Equipment Use

---

**Definition:** Identifies safety equipment worn or carried by the non-motorist [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian, 6 (Pedalcyclist) or 8"(Other or Unknown)].

If more than one item is noted on the Police Accident Report the lowest numbered code shown below is selected. From 2002 on all items for a non-motorist are available in the Safetyeq data set (SAS variable MSAFEQMT).

**SAS Name: SAF\_EQMT [P20NZ.]**

#### Attribute Codes

##### 1990-1998 1999-Later

0		None Used or Not Applicable
	0	Not Applicable
	1	Not Used
1	2	Bicycle Helmet
2	3	Reflective Equipment
3	4	Bicycle Helmet and Reflective Equipment
8	8	Other Safety Equipment
9	9	Unknown if Used

## Variable Definitions and Codes – Person File

---

### P21 Air Bag Availability/Function

---

**Definition:** Indicates whether the vehicle was equipped with an air bag in the seat position of this occupant, and if so, the deployment status. Not Applicable (8) is coded if the person is a non-motorist.

This variable was added to the Person File in 1992

**SAS Name:** AIRBAG [P21N.]

#### Attribute Codes:

1992-1999	2000-Later	
0	0	No Air Bag Available (includes airbags that are switched off)
1	1	Deployed
2	2	Non-Deployed
	8	Not Applicable
9	9	Unknown if Available or Deployed

## **Variable Definitions and Codes – Person File**

---

### **P22 Non-Motorist Striking Vehicle Number**

---

**Definition:** This variable identifies the vehicle which made contact with the non-motorist. The value entered must match the vehicle number of the striking vehicle.

This variable was added to the Person data set in 1994.

**SAS Name: STR\_VEH**

#### **Attribute Codes 1994-Later**

- 0 = Not Applicable, Occupant of Vehicle
- 1 – 30 = Vehicle Number
- 99 = Unknown



### **The Impair Data Set**

The Impair data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, VEHNO, PERNO, and MIMPAIR. CASENUM, VEHNO, and PERNO should be used to merge the Impair data set with the Person data set.

### **M P18 Person's Physical Impairment**

---

**Definition:** Identifies all physical impairments for all drivers and non-motorists which may have contributed to the cause of the crash.

This variable has been coded at the person level and included in the Person data set (SAS variable IMPAIRMT) since 1990. Starting in 2002 all impairments a driver or non-motorist are available in the Impair data set.

**SAS Name: MIMPAIR [P18N.]**

#### **Attribute Codes 2002 - Later**

- 0 = None
- 1 = Ill, Blackout
- 2 = Drowsy, Sleepy, Fell Asleep, Fatigued
- 3 = Requires Cane or Crutches
- 4 = Paraplegic or Restricted to Wheelchair
- 5 = Impaired Due to Previous Injury
- 6 = Deaf
- 7 = Blind
- 97 = Physical Impairment-No Details
- 98 = Other Physical Impairments
- 99 = Unknown if Physically Impaired

### The Nmaction Data Set

The Nmaction data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MACTION. CASENUM and PERNO should be used to merge the Impair data set with non-motorists from the Person data set [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8"(Other or Unknown)].

#### **M P19 Non-Motorist Action**

---

**Definition:** Identifies circumstances (actions) that may have contributed to the cause of the crash. The actions coded pertain to non-motorists only [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8"(Other or Unknown)].

This variable has been coded at the person level and included in Person data set (SAS variable ACTION) since 1990. Starting in 2002 all actions for a non-motorist are available in the Nmaction data set.

**SAS Name: MACTION [P19N.]**

#### **Attribute Codes 2002-Later**

0 No Action

##### *Non-Motorist Vehicle Operator:*

- 1 Failing to Have Lights on When Required
- 2 Operating without Required Equipment
- 3 Improper or Erratic Lane Changing
- 4 Failure to Keep in Proper Lane or Running Off Road
- 5 Making Improper Entry to or Exit from Trafficway
- 6 Operating the Vehicle in Erratic, Reckless, Negligent Manner
- 7 Failure to Yield Right of Way
- 8 Failure to Obey Traffic Signs/Control Devices/Officers, Failure to Observe Safety Zone
- 9 Making Other Improper Turn
- 10 Driving on Wrong Side of Road

##### *Other Non-motorist:*

- 21 Darting or Running into Road
- 22 Improper Crossing of Roadway or Intersection (Jaywalking)
- 24 Inattentive (Talking, Eating, etc.)
- 25 Jogging
- 26 Non-Motorist Pushing Vehicle
- 27 Walking with Traffic
- 28 Walking Against Traffic
- 29 Playing, Working, Sitting, Lying, Standing, Etc. In Roadway
- 98 Other Action
- 99 Unknown Action

### **The Safetyeq Data Set**

The Safetyeq data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, PERNO, and MSAFEQMT. CASENUM and PERNO should be used to merge the Safetyeq data set with non-motorists from the Person data set [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8 (Other or Unknown)].

### **M P20 Non-Motorist Safety Equipment Use**

---

**Definition:** Identifies safety equipment worn or carried by the non-motorist [Person Type (P3) =4 (Occupant of a Non-Motor Vehicle Transport Device), 5 (Pedestrian), 6 (Pedalcyclist) or 8 (Other or Unknown)].

This variable has been coded at the person level and included in Person data set (SAS variable SAF\_EQMT) since 1990. Starting in 2002 all items for a non-motorist are available in the Safetyeq data set

**SAS Name: MSAFEQMT [P20NZ.]**

#### **Attribute Codes 2002-Later**

- 0 = Not Applicable
- 1 = None Used
- 2 = Bicycle Helmet
- 3 = Reflective Equipment
- 4 = Bicycle Helmet and Reflective Equipment
- 8 = Other Safety Equipment
- 9 = Unknown if Used

### The Biketraf Data Set

The Biketraf data set contains the variables CASENUM, PSU, STRATUM, REGION, WEIGHT, PJ, and PERNO. CASENUM and PERNO should be used to merge the Biketraf data set with cyclists in the Person data set (PER\_TYPE=6). It also contains:

#### **MB A16 Traffic Control Device – Cyclist**

---

**Definition:** Indicates whether or not traffic control devices were present for a cyclist and the types of traffic control device.

This variable has been coded at the Accident level and included in the Accident data set (SAS variable TRAF\_CON) since 1988. Starting in 2002 each traffic control device for a vehicle is in the Trafcon data set and each traffic control device for a cyclist is in the Biketraf data set. Also starting in 2002 a single, selected, traffic control device for a vehicle is available on the Vehicle data set (SAS variable VTRAFCON).

**SAS Name: BTRAFCON [A16N.]**

#### **Attribute Codes 2002 - Later**

0 = No Controls

##### *I. Not at Railroad Grade Crossing:*

###### *Trafficway Traffic Signals:*

- 1 = Traffic Control Signal (on colors)
- 4 = Flashing Traffic Control Signal or Flashing Beacon
- 8 = Other Traffic Signal
- 9 = Unknown Traffic Signal

###### *Regulatory, School Zone Signs:*

- 21 = Stop Sign
- 22 = Yield Sign
- 23 = School Zone Related Sign
- 28 = Other Sign
- 29 = Unknown Sign

###### *Warning Signs:*

- 40 = Advisory Speed Sign
- 41 = Warning Sign For Road Conditions (Hill, Steep Grade, Etc.)
- 42 = Warning Sign For Road Construction
- 43 = Warning Sign For Environment/Traffic (Fog Ahead, Wind, Crash Ahead, Etc.)
- 49 = Unknown Type Warning

###### *Miscellaneous, Not at Railroad Crossing:*

- 51 = Officer, Crossing Guard, Flagman, etc

##### *II. At Railroad Grade Crossing:*

- 61 = Active Devices (e.g., Gates, Flashing Lights, Traffic Signal)
- 62 = Passive Devices (e.g., Stop Sign, Cross Bucks)

##### *III. Other:*

- 97 = Traffic Control Present-No Details
- 98 = Other Traffic Control (whether or not at RR Grade Crossing)
- 99 = Unknown

# **APPENDICES**

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*Appendix A: Make/Model Designations*

*Appendix B: V23 Accident Type Diagram*

*Appendix C: Summary Statistics*

*Appendix D: Generalized Estimated Sampling Errors*

*Appendix E: Analytical Data Classification of Select GES Variables*

## **APPENDIX A: Make/Model Designations**

### **V3 Vehicle Make – SAS Name: MAKE 1988 - Later**

#### **Passenger Vehicles (01-69)**

01 American Motors	30 Volkswagen
02 Jeep (includes Kaiser-Jeep)	31 Alfa Romeo
03 AM General	32 Audi
06 Chrysler	33 Austin/Austin Healey
07 Dodge	34 BMW
08 Imperial	35 Nissan/Datsun
09 Plymouth	36 Fiat
10 Eagle	37 Honda
12 Ford	38 Isuzu
13 Lincoln	39 Jaguar
14 Mercury	40 Lancia
18 Buick	41 Mazda
19 Cadillac	42 Mercedes Benz
20 Chevrolet	43 MG
21 Oldsmobile	44 Peugeot
22 Pontiac	45 Porsche
23 GMC	46 Renault
24 Saturn	47 Saab
25 Grumman	48 Subaru
29 Other Domestic Make:	49 Toyota
Model Code indicates Makes:	50 Triumph
001 / Studebaker,Avanti	51 Volvo
002 / Checker	52 Mitsubishi
398 / Other Domestic Make	53 Suzuki
399 / Unknown Domestic Make	54 Acura
	55 Hyundai
	56 Merkur
	57 Yugo
	58 Infiniti
	59 Lexus
	60 Daihatsu
	61 Sterling
	62 Land Rover
	63 Kia
	64 Daewoo
	65 Mini
	69 Other Foreign Make
	Model Code indicates Makes:
	031 Aston Martin
	032 Bricklin
	033 Citreon
	034 Delorean
	035 Ferrari
	036 Hillman
	037J ensen
	038 Lamborghini
	039 Lotus
	040 Maserati
	041 Morris
	042 Rolls Royce/Bentley
	044 Simca
	045 Sunbeam
	046 TVR
	048 Desta
	049 Reliant
	052 Bertone
	053 Lada

**Motorcycles (70-79)**

70 BSA  
71 Ducati  
72 Harley-Davidson  
73 Kawasaki  
74 Moto-Guzzi  
75 Norton  
76 Yamaha  
78 All mopeds other than those above  
79 Other motorcycle

Also see: 34 BMW  
37 Honda  
44 Peugeot  
50 Triumph  
53 Suzuki

**Trucks and Buses (80-98)**

80 Brockway  
81 Diamond Reo/Reo  
82 Freightliner/White  
83 FWD  
84 International Harvester/Navistar  
85 Kenworth  
86 Mack  
87 Peterbilt  
88 Iveco/Magirus  
98 Other Medium/Heavy Trucks/ Buses and Other Vehicle Makes  
Model Code indicates Makes:  
801 Autocar  
802 Auto-Union-DKW  
803 Divco  
804 Western Star  
805 Oshkosh  
806 Hino  
807 Scania  
850 Truck based motor-home  
898 Other truck (e.g., Ward LaFrance, Marmon)  
902 NeoPlan (bus)  
950 Bus-based motor-home  
988 Other bus (e.g. Blue Bird, Chance Coach)  
989 Unknown bus  
998 Other vehicle (e.g.farm vehicle, go-cart)  
99 Unknown Make

Also see: 03 AM General  
07 Dodge  
12 Ford  
20 Chevrolet  
23 GMC  
25 Grumman  
35 Nissan/Datsun  
36 Fiat  
38 Isuzu  
42 Mercedes Benz  
51 Volvo  
52 Mitsubishi

### 1 AMERICAN MOTORS

CODE	MODEL	INCLUDES	YEAR
001	Rambler/American	Rogue, Scrambler, 220, 440,	all
002	Rebel/Matador	Barcelona Classic Brougham, 550, 660, 770,	all
003	Ambassador	Matador (-78), Marlin Brougham, DPL, SST, DL, Limited, 880, 990	all
004	Pacer	Limited, DL	75-80
005	AMX	(2 seater only)	68-70
006	Javelin	SST, AMX (71-74)	all
007	Hornet/Concord	Sportabout, Limited, DL, SC-360, SST, AMX (75-78)	all
008	Spirit/Gremlin	Limited, DL, Custom, X, GT (83-on), AMX (79-on)	all
009	Eagle	Concord based	80-87
010	Eagle SX-4	Spirit Gremlin based	81-84
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

Note: Alliance, Encore, Premier-See Renault - Code "46"

### 2 JEEP (Includes KAISER-JEEP)

CODE	MODEL	INCLUDES	YEAR
401	CJ-2/CJ-3/CJ-4	Military	-66
402	CJ-5/CJ-6/CJ-7/ CJ-8	Scrambler, Golden Eagle, Renegade, Laredo, Wrangler	67-on
403	YJ-series	Wrangler	86-on
404	Cherokee (84-on)	Limited, Laredo, Pioneer, Briarwood, Grand	84-on
405	Liberty		2002
421	Cherokee (-83)	Wide Track, Chief, Commando, Jeepster	all
431	Grand Wagoneer	Custom, Brougham Limited, Wagoneer	71-91
481	Pickup	J-10, J-20, Honcho	all
482	Comanche	Chief	86-92
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

### 3 AM GENERAL

CODE	MODEL	INCLUDES	YEAR
401	Dispatcher	Post Office (Jeep)	all
421	Hummer		93-on
466	Dispatcher	DJ-series-Post Office Van	all
498	Other light truck		-
499	Unknown light truck		-
884	Medium/Heavy truck	Military off-road	-
898	Other medium-heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based Motorhome		-
983	Bus flat front (rear engine) Transit		-



988	Other bus	-
989	Unknown bus	-
998	Other vehicle	-
999	Unknown vehicle	-

## 6 CHRYSLER

CODE	MODEL	INCLUDES	YEAR
009	Cordoba	Crown, 300, LS	75-83
010	New Yorker/Newport/ Fifth Avenue/Imperial	Custom, Royal, Brougham, Town and Country, 300 (-71) (excludes all FWD)	all
014	New Yorker/E Class/ Imperial (90-93)/Fifth Avenue	FWD vehicles, Turbo	83-on
015	Laser	Turbo, XE, XT	84-86
016	LeBaron	Medallion, Salon(RWD), Landau, LX, FWD except GTS or GTC Sport Coupe	77-on
017	LeBaron GTS/GTC	GTS-Turbo	85-on
		GTC-Sport Coupe	87-on
018	Intrepid (Canadian made)		
019	Neon (export)		
031	TC (Maserati Sport)	Turbo Convertible	88-91
035	Conquest	TSi, Turbo	87-89
041	Concorde		93-on
042	LHS	New Yorker (94-on)	94-on
043	Sebring		95-on
044	Cirrus		95-on
051	300M		
052	PT Cruiser		2001-on
054	Pacifica		
055	Crossfire		
398	Other automobile		-
399	Unknown automobile		-
441	Town and Country	Minivan	90-on
442	Voyager		2002
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

## 7 DODGE

CODE	MODEL	INCLUDES	YEAR
001	Dart	Custom, Swinger, Sport, GT, Demon, Special, Special Edition, 170,270,340,360	62-76
002	Coronet/Charger(-78)/ Magnum	Brougham, Custom, Superbee, Crestwood, Deluxe, XE, R/T, SE, 440, 500, Police	-79
003	Polara/Monaco Royal Monaco	Custom, Special, Crestwood, Brougham, Police, Taxi	- 78
004	Viper	RT/10	92-on
005	Challenger	R/T, T/A, Rallye	70-74
006	Aspen	Custom, Special Edition, Police,	76-80

		R/T, Sport	
007	Diplomat	Medallion, Salon, S	77-89
008	Omni/Charger (83 on)	024, DeTomaso Miser, GLH, GLHS, Shelby, Charger 2.2, America, Expo	78-90
009	Mirada		80-83
010	St. Regis	Police, Taxi	79-81
011	Aries (K)	Custom, SE, LE	81-89
012	400	LS	82-83
013	Rampage (car based pickup)	2.2, GT, Sport	82-84
014	600	ES, Turbo	83-88
015	Daytona	Turbo Z, Shelby Z Pacifica, C/S Competition, IROC R/T	84-94
016	Lancer	Pacifica, Turbo, ES, Shelby	85-89
017	Shadow	ES, Turbo	87-on
018	Dynasty		88-on
019	Spirit	ES, Shelby, RT	89-94
020	Neon	Expresso	94-on
033	Challenger	all imported	78-83
034	Colt (excludes Vista)	RS, Turbo, Custom, GTS, DL, E, Premier, Deluxe, Carousel, GT	74-94
035	Conquest	Turbo	84-86
039	Stealth		91-on
040	Monaco		90-92
041	Intrepid		93-on
042	Avenger		95-on
043	Stratus		95-on
398	Other automobile		
399	Unknown automobile		
401	Raider	Sport	86-on
421	Ramcharger		all
422	Durango		98-00
441	Vista	4x4	84-91
442	Caravan	Mini-Ram, SE	84-on
461	B-series vans	Sportsman, Royal, Maxiwagon, Ram B150-B350, Tradesman	all
462	Sprinter		
470	Van derivative	Kary Van	all
471	D50, Colt P/U, RAM50/RAM 100 all		
472	Dakota		87-on
481	D, W-series pickup	Ram, Custom, Royal, Miser, D100-D350, W100-W350	all -
482	Ram	1500/2500/3500 P/U	94-on
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	unknown engine location	
890	Medium/Heavy COE	entry position unknown	
898	Other medium/heavy truck		

899	Unknown Medium/heavy truck	-
950	Bus based motorhome	-
981	Medium bus (not van based)	-
988	Other bus	-
989	Unknown bus	-
998	Other vehicle	-
999	Unknown vehicle	-

**8 IMPERIAL**

CODE	MODEL	INCLUDES	YEAR
010	Imperial	Lebaron Mark Cross, Frank Sinatra editions	-76 81-83
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**9 PLYMOUTH**

CODE	MODEL	INCLUDES	YEAR
001	Valiant/Duster (-76)/ Scamp	100, 200, Brougham, Signet, Custom, Special 340/360, 340, 360, Twister	-76
002	Satellite/Belvedere	Belvedere I/II, GTX, Roadrunner (-74), Sebring, Sebring Plus, Superbird, Brougham	-74
003	Fury	I, II, III, Roadrunner (75), Salon, VIP, Sport, Suburban	-74 75-78
004	Gran Fury	Sedan, Brougham, Custom Sport, Suburban	75-89
005	Barracuda	Formula, S, 340, AAR, Cuda, Gran Coupe	65-74
006	Volaré	Custom, Premier, Roadrunner (76-on), Police	76-80
007	Caravelle	Turbo, SE	85-89
008	Horizon	TC-3, Miser, Turismo 2.2, Custom, SE, Duster (85-on), America, Expo	78-90
011	Reliant (K)	SE, LE	81-89
013	Scamp (car based pickup)	GT, 2.2	82-84
017	Sundance	Turbo	87-on
019	Acclaim	LX, LE	89-on
020	Neon	Expresso	94-on
031	Cricket		71-72
032	Arrow	Fire Arrow, GS, GT	76-80
033	Sapporo	all imported	78-83
034	Champ/Colt (excludes Vista)	Turbo, Custom-Station Wagon (84-on)	79-94
035	Conquest	TSi	84-89
038	Breeze		96-on
039	Prowler		96-on
037	Laser	RS, Turbo	89-on
398	Other automobile		
399	Unknown automobile		
421	Trailduster		all
441	Vista	4x4	87-on
442	Voyager (minivan)	SE, LX	84-on
461	Van-fullsize (B-series)	Voyager, Sport, Premier	all
471	Arrow pickup (foreign)		all

498	Other light truck	-
499	Unknown light truck	-
998	Other vehicle	-
999	Unknown vehicle	-

**10 EAGLE**

CODE	MODEL	INCLUDES	YEAR
034	Summit	DL, LX, ES	89-on
037	Talon	TSI	90-on
040	Premier	LX, ES	88-92
041	Vision		93-on
044	Medallion	DL, LX	88-90
398	Other automobile		-
399	Unknown automobile		-
441	Summit Wagon		92-on
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**12 FORD**

CODE	MODEL	INCLUDES	YEAR
001	Falcon	Sprint, GT, Futura	-70
002	Fairlane	Torino thru 1970	-70
003	Mustang/Mustang II	Mach, Boss, Grande, Cobra, Ghia, SVO, GT, LX, Shelby	65-on
004	Thunderbird (all sizes)	Landau, Heritage, Turbo coupe, Elan, Fila, Sport, LX, SC	55-on
005	LTD II	S, Squire, Brougham	77-79
006	LTD/Custom/Galaxie (all sizes)	XL, Landau, Ranch Wagon, Country Squire, S, 500, Brougham, XL GT	65-on
007	Ranchero	Falcon/Fairlane based Torino/LTD II based	-71 72-79
008	Maverick	Grabber	70-78
009	Pinto	Pony, MPG, ESS	71-80
010	Torino/Gran Torino/Elite	GT, Cobra, Sport, Squire, Brougham	71-76
011	Granada	ESS, Ghia	75-82
012	Fairmont	Futura, Sport Coupe	78-83
013	Escort/EXP	L, GL, GLX, SS, GT, LX	81-on
015	Tempo	L, GL, GLX, Sport, 4x4	84-94
016	Crown Victoria		81-on
017	Taurus	MT-5, L, GL, LX, SHO	86-on
018	Probe	GL, LX, GT	88-on
031	English Ford	Cortina	60-on
032	Fiesta	Sport, Ghia	78-80
033	Festiva		88-93
034	Laser		93-on
035	Contour		94-on
036	Aspire		94-on
037	Focus		
038	GT		

398	Other automobile		all
399	Unknown automobile		-
401	Bronco II/Bronco (-77) Explorer	Eddie Bauer, XL, XLT Explorer (90-on)	83-on
402	Escape		2001
421	Bronco-fullsize	Eddie Bauer, Custom, XL, XLT	78-on
422	Expedition		97-on
431	Excursion		2000
441	Aerostar	XLT, Cargo Van	86-on
442	Windstar		94-on
443	Freestar		
461	E-series vans	Econoline, Clubwagon, Chateau, E150-E350	all
470	Van derivative	i.e: parcel van	all
471	Ranger	Supercab, 4x4, STX, Splash	82-on
472	Courier	Imported pickup	all
473	Sport Trac		2001
481	F-series pickup	F-100 - F-350	all
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
880	F450/550 Pickup > 4,536 GVW		
881	Medium/Heavy	CBE F-5 thru F-8 L-series, FT-series	all
882	Medium/Heavy	COE C/CT series, low entry	all
883	Medium/Heavy	COE C/CLT series, high entry	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy	COE entry position unknown	-
898	Other medium/heavy	truck	-
899	Unknown medium/heavy	truck	-
950	Bus based motorhome		-
981	Medium bus	B-series (not van based)	all
988	Other bus		all
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

### 13 LINCOLN

CODE	MODEL	INCLUDES	YEAR
001	Continental/Town Car	Continental (-81), Town Car (82 on)	all
002	Mark	I, II, III, IV, V, VI, VII, LSC, VIII All Signature/ Designer Series	82-on all
005	Continental (82-on)	All Signature/Designer Series	
011	Versailles		77-80
012	LS		2000
398	Other automobile		-
399	Unknown automobile		-
401	Aviator		
421	Navigator		97-on
481	Blackwood		2002
498	Other Light Truck		97-on
499	Unknown Light Truck		97-on

998	Other vehicle	-
999	Unknown vehicle	

**14 MERCURY (MERKUR: See 56)**

CODE	MODEL	INCLUDES	YEAR
002	Cyclone	GT, CJ, Spoiler	-71
003	Capri-domestic	RS, Turbo, GS, Black Magic	79-86
004	Cougar/XR7	XR-7, RS, LS, GS, Eliminator, Brougham, Villager, (includes all body styles)	67-on
006	Marquis/Monterey	Marauder, X-100, Parklane, S-55, Custom, Brougham, Montclair, Grand Marquis	55-on
008	Comet	Caliente, GT, Voyager, 202, Capri (66-67)	62-77
009	Bobcat	Runabout, Villager	75-80
010	Montego	Comet (68-70), GT, MX, Villager, Brougham	67-76
011	Monarch	Ghia	75-80
012	Zephyr	GS, Z-7	78-83
013	Lynx/LN-7 (82-83)	L, LS, GS, RS, XR-3	81-87
015	Topaz	L, LS, GS, 4x4	84-on
017	Sable	LS, GS	86-on
031	Capri-foreign	Capri II	70-77
		2+2	89-94
033	Pantera	de Tamaso	72-74
036	Tracer	L, GL	88-on
037	Mystique		94-on
038	Cougar		
039	Marauder		
398	Other automobile		-
399	Unknown automobile		-
401	Mountaineer		96-on
443	Villager	LS, GS	93-on
444	Monterey		2004-on
498	Other light truck		
499	Unknown light truck		
998	Other vehicle		-
999	Unknown vehicle		-

**18 BUICK**

CODE	MODEL	INCLUDES	YEAR
001	Special/Skylark	GS, GS-350, GS-400, GS-455, GS, California, Sport wagon, Custom	-72
002	LeSabre/Centurion/ Wildcat	Estate Wagon, Luxus, Invicta, Custom, Limited T-Type	55-on
003	Electra, Electra 225, Park Avenue (91-on)	Limited, Park Avenue, Ultra	60-on
004	Roadmaster	Estate Wagon, Limited	91-on
005	Riviera	S-Type, T-Type	63-on
007	Century	Luxus, T-Type Luxus, T-Type, FWD (82-on), Custom, Regal (72-77)	72-on
008	Apollo/Skylark	Skylark (75), S/R	73-76
010	Regal	Turbo, Luxus, Grand National, GNX, T-Type	78-88
012	Skyhawk	S-Type, Roadhawk, T-Type, GT	75-89

015	Skylark (76-85)	(except 75), S/R, S, Limited, Sport, T-Type	-85
018	Somerset/Skylark	Skylark (86-on), Somerset GS, Regal, Custom, Limited, T-Type	85-on
020	Regal (FWD)	Limited	88-on
021	Reatta		88-91
031	Opel Kadett		-75
032	Opel Manta	1900, Luxus, Rallye, Sports Coupe	-75
033	Opel GT		-75
034	Opel Isuzu	Deluxe, Sport	76-79
398	Other automobile		-
399	Unknown automobile		-
401	Rendezvous		2002
402	Rainier		
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**19 CADILLAC**

CODE	MODEL	INCLUDES	YEAR
003	Deville/Fleetwood (except Limousine)	Coupe de Ville, Sedan de Ville, Fleetwood, Brougham, Fleetwood, 60 Special, etc.	all
004	Limousine	d'Elegance, Concourse	all
005	Eldorado	Fleetwood 75, Formal de Ville based	67-on
006	Commercial Series	Biarritz, El-doro, Touring Coupe	all
009	Allanté	Ambulance/Hearse	87-on
014	Seville		76-on
016	Cimarron	Elegante, STS	82-88
017	Catera	D'oro	97-on
018	CTS	RWD	2003
019	XLR		
020	SRX		
398	Other automobile		-
399	Unknown automobile		-
421	Escalade		
431	Escalade ESV		
480	Escalade EXT		
498	Other Light Truck		
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**20 CHEVROLET**

CODE	MODEL	INCLUDES	YEAR
001	Chevelle/Malibu	Classic, Concours, S-3, Laguna, Nomad, 330, Greenbriar, Estate, Deluxe, SS 396/454	64-83
002	Impala/Caprice	Biscayne, Belair, Super Sport, Classic, Classic Brougham, Townsman, Brookwood, Kingswood	55-on
004	Corvette	Stingray	53-on
006	Corvair	Corvair Monza, 500, Corvair	60-69

		Spyder, Corsa	
007	El Camino	Royal Knight, SS	59-on
008	Nova (-79)	Chevy II, LN, LE, Concours	62-79
		SS-350/396, Rally	
009	Camaro	SS, RS, LT, Berlinefta, IROC-Z, Z28	67-on
010	Monte Carlo (RWD)	LS, SS, Aerocoupe, Landau	70-88
011	Vega	GT, Cosworth	71-77
012	Monza	Spyder, 2+2, Towne Coupe	75-80
013	Chevette	S, Scooter, CS	76-87
015	Citation	X-11, Citation II	80-85
016	Cavalier	CS, RS, Z24	82-on
017	Celebrity	CS, Eurosport, VR	82-on
019	Beretta/Corsica	GT	87-on
020	Lumina	(GM-10 based), Z-34, Euro	90-on
031	Spectrum		85-on
032	Nova/GEO Prizm	CL, NUMMI-built vehicles	85-on
033	Sprint/GEO Sprint		85-on
034	GEO Metro	LSi, XFi	89-on
035	GEO Storm	GSi	85-on
036	Monte Carlo (FWD only)	Z34	95-on
037	Malibu		97-on
038	SSR		
039	Aveo		
398	Other automobile		
399	Unknown automobile		
401	S-10 Blazer, Blazer	S-10 p/u based	83-on
402	GEO Tracker	LSi	89-on
403	Geo Tracker		2002
404	Equinox		
421	Fullsize Blazer, Tahoe	K-series, fullsized p/u based	69-on
431	Suburban	All models	all
441	Astro Van	Minivan	85-on
442	Lumina APV		90-on
443	Ventura		97-on
461	G-series van	Beauville, Chevy Van, Sport Van, G10-G30, Express	all
466	P-series van		all
470	Van derivative	Hi-cube, Parcel Van	all
471	S-10/T-10	4x4	82-on
472	LUV	Imported pickup	all
473	Colorado		
481	C, K, R, V-series pickup	C10-C30, K10-K30, R10-R30, V10-V30, Silverado, C-K1500, 2500, 3500	all
482	Avalanche		2002
498	Other light truck		
499	Unknown light truck		
850	Truck based motorhome		
881	Medium/Heavy CBE	C50/60/65, M60/65, H70/80/90, J70/80/90, Bison 90, all other CBE	all
882	Medium/Heavy COE low entry	T60/65, all other COE low entry	all
883	Medium/Heavy COE high entry	Titan 90, all other COE high entry	all



884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus	S-60 series	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

## **21 OLDSMOBILE**

<b>CODE</b>	<b>MODEL</b>	<b>INCLUDES</b>	<b>YEAR</b>
001	Cutlass (RWD-only)	Supreme, S, LS, Salon Brougham, Vista Cruiser, F85 (thru 72), Rallye 350, Hurst Olds, 442, Calais, Classic (88)	62-88
002	Delta 88	Royale, Custom, Delta, Jetstar 88, Delmont 88, Starfire (thru 66), Custom Cruiser	all
003	Ninety-Eight	Regency, Luxury	all
005	Toronado	XSR, Trofeo, Brougham Custom	66-92
006	Commercial Series	Ambulance/Hearse	all
012	Starfire	SX,GT	75-80
015	Omega	All front wheel drive	75-85
016	Firenza	S, LS, SX, Cruiser, GT	82-88
017	Ciera	Cutlass Ciera, Brougham, ES	82-on
018	Calais	GT, ES, 500	85-91
020	Cutlass (FWD)	Supreme	88-on
021	Achieva	SC	92-on
022	Aurora		94-on
023	Intrigue		
024	Alero		
398	Other automobile		
399	Unknown automobile		
401	Bravada		91-on
441	Silhouette		90-on
498	Other light truck		
499	Unknown light truck		
998	Other vehicle		
999	Unknown vehicle		

## **22 PONTIAC**

<b>CODE</b>	<b>MODEL</b>	<b>INCLUDES</b>	<b>YEAR</b>
001	Lemans Tempest (-79)	Safari, T-37, Luxury, Grand Sport, GTO (-73), GT-37, Sprint, Judge, Grand AM (73-75), Grand Lemans	62-79
002	Bonneville/Catalina/Parisienne	Brougham, Grand Safari, Safari, Grandville, 2+2 Executive, Starchief SE, SSE, SSEi, Parisienne	all
005	Fiero	2M4, 2M6, GT, SE	84-88
008	Ventura	II, SJ, Sprint, GTO (74-on), Custom	71-77
009	Firebird/Trans AM	Esprit, Formula, GTA, Redbird,	67-on

010	Grand Prix (RWD)	Yellowbird, Skybird, SE J, LJ, SJ, Brougham, 2+2	63-87
011	Astre	Safari, SJ, Custom	75-77
012	Sunbird (thru 80)	Safari, Sport, Formula	76-80
013	T-1000/1000		81-87
015	Phoenix	LJ, SJ	77-84
016	J2000/2000/Sunbird Sunfire	Sunbird (84-on), LE, SE, GT, Convertible, GT/SE	82-on
017	6000	STE, SE, LE	82-on
018	Grand AM	SE,LE	all
020	Grand Prix (FWD)	SE	88-on
031	Lemans (88-on)	SE, Tempest (Canadian)	88-on
398	Other automobile		-
399	Unknown automobile		-
401	Aztek		2001
402	Vibe		2003
441	Trans Sport		90-on
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**23 GMC**

CODE	MODEL	INCLUDES	YEAR
007	Caballero/Sprint	Sierra Madre del Sur, SP	65-on
398	Other automobile		-
399	Unknown automobile		-
401	Jimmy/Typhoon	S15 based	83-on
421	Fullsize Jimmy Yukon	fullsize pickup based	all
431	Suburban	all models	all
441	Safari (minivan)		86-on
461	G-series van	Rally Van, Vandura, G15-G35, Savana	all
466	P-series van		all
470	Van derivative	Hicube, parcel van, Value Van, Magna Van	all
471	S15FT15/Sonoma		82-on
472	Canyon		-
481	C, K, R, V-series pickup	C15-35, K15-35, R15-35, V15-35, Sierra	all
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
881	Medium/Heavy CBE	W5000/6000/7000 series, Brigadier/General models	all
882	Medium/Heavy COE low entry	W6000/W7000, all other COE, low entry	all
883	Medium/Heavy COE high entry	Astro 95, all other COE, high entry	all
884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus	B6000	all
988	Other Bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

**24 SATURN**

CODE	MODEL	INCLUDES	YEAR
001	SL	SL1, SL2, SL3	91-on
002	SC	SC1, SC2	91-on
003	SW	SW1, SW2	93-on
004	EV1	(electric vehicle)	97-on
005	LS		2000
006	LW		2000
007	Ion		
398	Other automobile		-
399	Unknown automobile		-
401	Vue		2002
499	Unknown light truck		-
998	Other vehicle		-

999 Unknown vehicle

**25 GRUMMAN**

CODE	MODEL	INCLUDES	YEAR
441	LLV	Postal vehicle	all
442	Step-in van	Multi-stop, step van	all
498	Other light truck		-
499	Unknown light truck		-
850	Truck based motorhome		-
881	Medium/Heavy CBE		all
882	Medium/Heavy COE low entry		all
883	Medium/Heavy COE high entry		all
884	Medium/Heavy Unknown engine location		-
890	Medium/Heavy COE entry position unknown		-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
983	Bus-flat front, rear engine	Transit	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

**29 OTHER DOMESTIC MANUFACTURER**

CODE	MODEL	INCLUDES	YEAR
001	Studebaker/Avanti	Lark, Gran Turismo, Hawk, Cruiser, all associated subseries	-66
002	Checker	Marathon, Superba, Taxi, Aerobus	-82
398	Other make	Desoto, Excaliber, Stutz, Hudson, Packard, Consulier	all
399	Unknown make		-
498	Other Light Truck		-
988	Other Bus		-

**30 VOLKSWAGEN**

CODE	MODEL	INCLUDES	YEAR
031	Karmann Ghia		-74
032	Beetle 1300/1500	flat windshield	-77
033	Super Beetle	distinguished by curved windshield	71-80
034	411/412	Squareback/Fastback	71-74
035	Squareback/Fastback	Type 3, 1600	-74
036	Rabbit	L, GTI, Sport, LS, Custom, DL, Deluxe	75-84
037	Dasher		74-81
038	Scirocco	16V	75-88
040	Jetta	GL, GLI	80-92
041	Quantum	Synco	82-88
042	Golf	Synco, GTI, Cabriolet, GT, GL	85-92
043	Rabbit pickup	car based pickup	80-83
044	Fox		87-on
045	Corrado		89-on

046	Passat		90-on
047	Jetta III		93-on
048	Golf III		93-on
049	New Beetle		1988
398	Other automobile		
399	Unknown automobile		-
401	The Thing (181)		73-75
421	Touareg		-
441	Vanagon/Camper	Bus, Kombi, Van	all
442	Eurovan		92-on
498	Other light truck		-
499	Unknown light truck		-
998	Other Vehicle		-
999	Unknown vehicle		-

### 31 ALFA ROMEO

CODE	MODEL	INCLUDES	YEAR
031	Spider	All roadsters, Veloce, 1750/2000 roadsters	all
032	Sports Sedan	All 4 door sedans Milano (86), Giulia, Super, Berlina, Alfetta, 1750/2000 sedans	all
033	Sprint Veloce	All 2-door coupes Alfetta GT, 1750/2000 GTV, Sprint GT	all
034	GTV-6		81-on
035	164		89-on
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

### 32 AUDI

CODE	MODEL	INCLUDES	YEAR
031	Super 90		70-72
032	100/A6	S, LS, GL, Quattro (89 on)	70-77 89 on
033	Fox		74-79
034	4000	Quattro, Coupe GT, CS, S	80-88
035	5000	Quattro, CS, S, Turbo	78-88
036	80/90	Quattro	88-95
037	200	Quattro	88-92
038	V-8 Quattro		90-94
039	Coupe Quattro		90-93
040	S4/S6		93-on
041	Cabriolet		94-on
042	A4		96-on
043	A3		96-on
044	A8		96-on
045	TT		2000
046	S8		2001
047	Allroad		2001

398	Other automobile	-
399	Unknown automobile	-
998	Other vehicle	-
999	Unknown vehicle	-

### 33 AUSTIN/AUSTIN HEALEY

CODE	MODEL	INCLUDES	YEAR
031	Marina	GT	all
032	America		all
033	Healey Sprite		all
034	Healy 3000	Healy 100	all
035	Mini		all
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

### 34 BMW

CODE	MODEL	INCLUDES	YEAR
031	1600, 2000	Tii, 1800, 2000S	-76
032	Coupe	2800CS, 3.0CS	69-76
033	Bavaria Sedan	2500, 2800	69-74
034	3-series	318i, 318ti, 320i, 325e, 325es, 325i, 328, M3	77-on
035	5-series	524i, 528i, 530i, 533i, 535i, TD	75-on
		525i (wagon), M5, 540iA, 540i	77-on
036	6-series	630, 633, 635, csi, M6	
037	7-series	733i, 735i, L7, 740i, 750iL	78-on
038	8-series	850	90-on
039	Z3		96-on
040	Z8		
042	Z4		
398	Other automobile		-
399	Unknown automobile		-
401	X5	4WD	2000
402	X3		
499	Unknown Light Truck		-

### Motorcycles

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc
799	Unknown motored cycle

998	Other Vehicle
	-
999	Unknown vehicle

**35 NISSAN/DATSUN**

CODE	MODEL	INCLUDES	YEAR
031	F10		77-78
032	200/240 SX		78-on
033	1200/210/B210	Honeybee	71-82
034	Z-car, ZX	240/260/280Z, 300 ZX, Turbo, 2+2	70-on
035	310		79-82
036	510	PL	68-73
			78-81
037	610	PL	73-76
038	710	PL	74-77
039	810/Maxima	77-on	
040	Roadster	SPL 311, SRL 311, 1600, 2000, convertible	-70
041	PL 411, RL 411		-67
042	Stanza	XE	82-92
043	Sentra		83-on
044	Pulsar	NX, EXA (86-on)	83-90
045	Micra		87-on
046	NX1600/2000		92-on
047	Altima		93-on
048	350Z		-
049	Murano		-
398	Other automobile		
399	Unknown automobile		
401	Pathfinder	MPV, 4 x 4	86-on
402	Xterra		2000
421	Armada		-
441	Van	XE, GXE	87-on
442	Axxess		89-90
443	Quest		93-on
471	Datsun/Nissan Pickup	PL620, King Cab, Hardbody	73-on
473	Titan		-
498	Other light truck Patrol		(1960)
499	Unknown light truck		
883	Medium/Heavy COE	high entry	all
898	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
998	Other vehicle		-
999	Unknown vehicle		

**36 FIAT**

CODE	MODEL	INCLUDES	YEAR
031	124 (Coupe/Sedan)	Sport	67-75
032	124 Spider/Racer	Spider 2000/1500	68-83
033	Brava - 131		75-82
034	850 (Coupe/Spyder)		67-73
035	128		72-79
036	X-1/9		75-83
037	Strada		79-83

398	Other automobile	600, 1100	all
399	Unknown automobile		
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
998	Other vehicle		-
999	Unknown vehicle		

**37 HONDA (ACURA: See 54)**

CODE	MODEL	INCLUDES	YEAR
031	Civic/CRX	1300, 1500, CVCC, DX, EX, VX, S, Si, HF, 4WD Wagon, del Sol	73-on
032	Accord	LX, CVCC, SE-i, LX-i, EX Wagon	76-on
033	Prelude	Si	80-on
034	600	Coupe, Sedan	
	all		
035	S2000		
037	Insight		
398	Other automobile	all Hondas not listed above	
	all		
399	Unknown automobile		-
401	Passport		94-on
402	CR-V		
403	Element		
421	Pilot		
441	Odyssey		95-on
498	Other Light Truck		94-on
499	Unknown Light Truck		94-on

*Motorcycles*

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc

*All Terrain Cycles/Vehicles (Model codes 731–739 are designed solely for off-road use)*

CODE	MODEL
731	0-50cc
732	51-124 cc
733	125-349 cc
734	350cc or greater
739	Unknown cc
798	Other Motorcycle
799	Unknown motored cycle
998	Other vehicle
999	Unknown vehicle



### 38 ISUZU

CODE	MODEL	INCLUDES	YEAR
031	I-Mark	S, RS, Turbo	85-89
032	Impulse	Turbo, RS	84-on
033	Stylus		90-an
398	Other automobile		-
399	Unknown automobile		-
401	Trooper/Trooper II	Deluxe, LS	84-on
402	Rodeo		91-on
403	Amigo		89-94
404	Vehicross		1999
405	Axiom		2000
421	Ascender		-
441	Oasis		96-on
471	P'up (pickup)	4 x 4	all
498	Other light truck		-
499	Unknown light truck		all
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus Conventional front engine		-
982	Bus Front engine/flat front		-
983	Bus Rear engine/flat front		-
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

### 39 JAGUAR

CODE	MODEL	INCLUDES	YEAR
031	XJ-S Coupe	76-on	
032	XJ6/12 Sedan/Coupe	L, XJ, C, 340/420 Sedan	all
033	XKE	V12, Roadster, 120, 2 + 2	all
034	X100	97-on	
035	X-Type		
398	Other automobile	-	
399	Unknown automobile	-	
998	Other vehicle	-	
999	Unknown vehicle	-	

### 40 LANCIA

CODE	MODEL	INCLUDES	YEAR
031	Beta Sedan - HPG		80
032	Beta Coupe - Zagato		82
033	Scorpion		78
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**41 MAZDA**

CODE	MODEL	INCLUDES	YEAR
031	RX2		72-74
032	RX3		72-78
033	RX4		74-78
034	RX7	S, GS, GSL, SE	79-on
035	323/GLC/Protege	DX, Protege (90-on)	77-on
036	Cosmo		76-78
037	626	GT, GS, GSL, SE	79-on
038	808		72-77
039	Mizer		76
040	R-100		-72
041	616/618		-72
042	1800		-72
043	929		88-on
044	MX-6	Turbo	88-on
045	Miata		90-on
046	MX-3		92-on
047	Millenia		95-on
048	MP3		
049	RX-8		
050	Mazda 6		
051	Mazda 3		-
398	Other automobile		-
399	Unknown automobile		-
401	Navajo		91-on
402	Tribute		
441	MPV		89-on
471	Mazda pickup	B-2000, B-2200, B-2600, B-4000, Cab Plus, SE-5, LX	all
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**42 MERCEDES BENZ**

CODE	MODEL	INCLUDES	YEAR
031	200/220/230/240/250/ 260/280/300/320/420	Sedan and 5 passenger C only, SE, CD, D, SD, TD, CE, E. <b>DOES</b> <b>NOT</b> include <b>280 SE</b> (75 on), <b>300 SD</b> - see code 037	all
032	230/280 SL	2 seater only	all
033	300/350/380/450/500 SL, 560 SL	2 seater only, 300/500 SL (90-on)	all
034	350/380/420/450/560	SLC	all
035	280/300 SEL	TD, TD-T, CDT	all
036	380/420/450/500/560 SEL and 500/560 SEC/ 350 SDL/300 SDL		all
037	300 SE/380/450 SE	280 S, 280 SE (75 on), 300 SD Sedan, 350 SD	all
038	600, 6.9 Sedan	Pullman	all

039	190	D, TD, 2.3, 2.5	all
040	300	CE Cabriolet	93-on
041	400/500E		92-on
042	220/280C		94-on
043	S Class		
044	SL Class		
045	SLK		
046	CL		
047	CLK		
048	E		
398	Other automobile		-
399	Unknown automobile		-
401	M		
402	G Class		
470	Van derivative	Kurbstar	82-on
498	Other light truck		-
499	Unknown light truck		-
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	Unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Medium bus		all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

**43 MG**

CODE	MODEL	INCLUDES	YEAR
031	Midget	MKIII, 1500	-79
032	MGB		76-79
033	MGB	GT	67-75
034	MGA		all
035	TA/TC/TD/TF		all
036	MGC	GT	-69
398	Other automobile	Sport Sedan	-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**44 PEUGEOT**

CODE	MODEL	INCLUDES	YEAR
031	304		71-73
032	403		-67
033	404		-70
034	504/505	STI, STX, Turbo, S, GL, GLS, Liberte, Station Wagon	70-91
035	604	SL, D	77-84

036	405	Mi-16	89-91
398	Other automobile		-
399	Unknown automobile		-

*Motorcycles*

<b>CODE</b>	<b>MODEL</b>
701	0-50cc
702	51-124cc
709	Unknown cc
799	Unknown motored cycle
998	Other vehicle
999	Unknown vehicle

**45 PORSCHE**

<b>CODE</b>	<b>MODEL</b>	<b>INCLUDES</b>	<b>YEAR</b>
031	911	L, S, E, T, SC, Carrera, Slophenose, Speedster, Panorama	all
032	912	E, T	-69
033	914	S, 1.8, 2.0, 914/6	70-76
034	924	Turbo, S	77-88
035	928	S	78-on
036	930	Turbo	79
037	944	Turbo, S	83-91
038	959		89-94
039	968		92-95
040	986		96-on
398	Other automobile	Spyder, Speedster, 356	-
399	Unknown automobile		-
421	Cayenne		-
998	Other vehicle		-
999	Unknown vehicle		-

**46 RENAULT**

<b>CODE</b>	<b>MODEL</b>	<b>INCLUDES</b>	<b>YEAR</b>
031	LeCar	R5	76-83
032	Dauphine/I0/R-8/ Caravelle	all models	-71
033	12	R12L, R12TL	72-77
034	15	R15, R15TL	73-76
035	16	R16	69-72
036	17	R17, Gordini Coupe, R17TL	73-80
037	RI 8i	Sportwagon	81-on
038	Fuego	TL, TS, GTL, GTS, Turbo	82-85
039	Alliance/Encore, GTA,Convertible	L, DL, Limited, X-37	83-on
041	Alpine	GT	87-on
044	Medallion	DL, LX	87 only
045	Premier		87 only
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**47 SAAB**

<b>CODE</b>	<b>MODEL</b>	<b>INCLUDES</b>	<b>YEAR</b>
031	99/99E/900	S, Turbo, Cabriolet	all
032	Sonnett	II, III, V-4	68-74
033	95/96/97		-73
034	9000	S, Turbo, CS (93-on)	85-on
035	9-3		
036	9-5		
398	Other automobile	Monte Carlo 850	all
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**48 SUBARU**

CODE	MODEL	INCLUDES	YEAR
031	DL/FE/G/GF/GL/GLF/ STD/Loyale	4 wheel drive, Turbo	72-94
032	Star		70-71
033	360		69-70
034	Legacy	Brighton, Outback, Outback II	89-on
035	XT, XT6	4WD Turbo, convertible, DL	86-on
036	Justy	DL, GL	87-94
037	SVX		92-on
038	Impreza		93-on
043	Brat	DL, GL	78-on
044	Baja		-
045	Outback		-
398	Other automobile		-
399	Unknown automobile		-
401	Forester		
498	Other Light Truck		
499	Unknown Light Truck		
998	Other vehicle		-
999	Unknown vehicle		-

**49 TOYOTA**

CODE	MODEL	INCLUDES	YEAR
031	Corona	Mark 11, Custom, 1900, 2000, Deluxe	-82
032	Corolla	1100, 1200, 1600, SR-5, LE, Deluxe, Custom, FX16	69-85 86-on
033	Celica	1900, 2000, GT, ST, GTS	71-on
034	Supra	Celica Supra, Soarer	79-92
035	Cressida		78-92
036	Crown	2300, 2600	-71
037	Carina	2000	72-73
038	Tercel	Corolla Tercel, 4WD Wagon	80-on
039	Starlet		81-84
040	Camry	LE, Deluxe, XLE, Coupe	83-on
041	MR-2		85-95
042	Paseo		92-on
043	Avalon		95-on
044	Solara		
045	Echo		
046	Prius		
048	Scion XA		-
049	Scion XB		-
398	Other automobile	2000 GT Coupe (1960s)	all
399	Unknown automobile		-
401	4-Runner		85-on
402	RAV-4		96-on
403	Highlander		
404	Matrix		
421	Landcruiser		76-on
422	Sequoia		

441	Minivan/Previa(		84-on
442	Sienna		
471	Pickup	SR-5, Extra Cab, Sport, LN44, Chinook, Wonder Wagon	74-on
472	Takoma		95-on
481	T-100		93-on
482	Tundra		
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**50 TRIUMPH**

CODE	MODEL	INCLUDES	YEAR
031	Spitfire	I, II, III, IV, 1500	-81
032	GT-6	MK3	67-73
033	TR4	TR2, TR3, TR4A	-68
034	TR6		69-76
035	TR7/8		75-81
036	Herald	Vitesse	60-74
037	Stag		60-74
398	Other automobile	2000, 1200 series	-
399	Unknown automobile		-

**Motorcycles**

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc
799	Unknown motored cycle
998	Other vehicle
999	Unknown vehicle

**51 VOLVO (includes Volvo/White and Volvo/GM Heavy Trucks)**

CODE	MODEL	INCLUDES	YEAR
031	122	S	58-68
032	142/144/145	S, E, GL, GLS, Deluxe	67-74
033	164	S, E	69-75
034	240/242/244/245	DL, GL, GLE, GLT, Deluxe	75-on
035	262/264/265	GL	76-82
036	1800	E, S, ES	60-73
037	P-544		47-65
038	760	Turbo	83-90
	780		87-92

039	740	GLE, GE, Turbo, GL	85-92
040	940	BLE, Turbo, SE	91-on
041	960		92-on
042	850	GLT, Wagon	93-on
043	70 Series		
044	90 Series		
045	80 Series		
046	40 Series	S40,V40	
047	60 Series		
398	Other automobile		-
399	Unknown automobile		-
401	XC90		
881	Medium/Heavy CBE		all
882	Medium/Heavy COE	low entry	all
883	Medium/Heavy COE	high entry	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
989	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Medium bus		all
988	Other bus		all
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

**52 MITSUBISHI**

CODE	MODEL	INCLUDES	YEAR
031	Starion	2+2, LE, Turbo	83-90
032	Tredia	L, LS, Turbo	83-88
033	Cordia	L, Turbo	83-88
034	Galant	ECS, Sigma (thru-88)	85-on
035	Mirage	L, Turbo	85-on
036	Precis		90-on
037	Eclipse		90-on
038	Sigma		89-90
039	3000 GT		91-on
040	Diamante		92-on
046	Lancer		
398	Other automobile		-
399	Unknown automobile		-
401	Montero	Sport	85-on
402	Outlander		
403	Endeavor		-
441	Minivan	LS	87-on
442	Expo	LRV, Sport	92-95
471	Pickup	Mighty Max, SPX, 4x4	all
498	Other light truck		-
499	Unknown light truck		-



882	Medium/Heavy COE	low entry, FUSO FE	all
898	Other medium/heavy truck		-
899	Unknown medium/heavy truck		-
950	Bus based motorhome		-
981	Bus Conventional front engine		all
982	Bus Front engine/flat front		all
983	Bus Rear engine/flat front		all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-

**53 SUZUKI**

CODE	MODEL	INCLUDES	YEAR
031	SA310	GLX	86-on
034	Swift	GTi,GTX	89-on
035	Esteem		
036	Aerio		
037	Forenza		-
038	Verona		-
398	Other automobile		-
399	Unknown automobile		-
401	Samurai	Standard, Deluxe	85-95
402	Sidekick		89-on
403	X-90		96-on
404	Gvand Vitara		-
405	XL7		-
498	Other light truck		-
499	Unknown light truck		-

*Motorcycles*

CODE	MODEL
701	0-50cc
702	51-124cc
703	125-349cc
704	350-449cc
705	450-749cc
706	750cc-over
709	Unknown cc

*All Terrain Cycles/Vehicles*

CODE	MODEL	INCLUDES	YEAR
731	0-50cc	includes all ATCs/ATVs	
732	51-124	designed solely for off-road use.	
733	125-349cc		
734	350cc or greater		
739	Unknown cc		
799	Unknown motored cycle		
998	Other vehicle		
999	Unknown vehicle		

**54 ACURA**

CODE	MODEL	INCLUDES	YEAR
031	Integra	RS, LS	86-on
032	Legend/RL		86-on
033	NSX	NSX -T	91-on
034	Vigor/TL	TL2.5/TL3.2	92-on
035	CL	Coupe	96-on
038	RSX		
039	TSX		-
398	Other automobile		-
399	Unknown automobile		-

401	SLX	96-on
421	MDX	-
498	Other Light Truck	
499	Unknown Light Truck	
998	Other vehicle	-
999	Unknown vehicle	-

**55 HYUNDAI**

CODE	MODEL	INCLUDES	YEAR
031	Pony		84-88
032	Excel	GL, GLS	84-94
033	Sonata		89-on
034	Scoupe		91-95
035	Elantra		92-on
036	Accent		95-on
037	Tiburon		-
038	XG300		-
398	Other automobile		-
399	Unknown automobile		-
401	Santa Fe		-
498	Other Light Truck		-
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**56 MERKUR**

CODE	MODEL	INCLUDES	YEAR
031	XR4Ti	Turbo	85-89
032	Scorpio	Tu rbo	87-90
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**57 YUGO**

CODE	MODEL	INCLUDES	YEAR
031	GV	GVX, Cabriolet	86-92
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**58 INFINITI**

CODE	MODEL	INCLUDES	YEAR
031	M30		90-92
032	Q45		90-on
033	G20		91-96
034	J30		93-on
035	I30		96-on

036	I35	-
037	G35	-
038	M45	-
039	FX35/45	-
398	Other automobile	-
399	Unknown automobile	-
401	T30	97-on
498	Other Light Truck	97-on
499	Unknown Light Truck	97-on
998	Other vehicle	-
999	Unknown vehicle	-

**59 LEXUS**

CODE	MODEL	INCLUDES	YEAR
031	ES-250/ES-300		90-on
032	LS-400		90-on
033	SC-300/SC-400	2 door Coupe	92-on
034	GS-300		94-on
035	IS-300		
036	SC 430		2002
398	Other automobile		-
399	Unknown automobile		-
401	RX300		
421	LX-450		96-on
498	Other light Truck		96-on
499	Unknown Light Truck		96-on
998	Other vehicle		-
999	Unknown vehicle		-

**60 DAIHATSU**

CODE	MODEL	INCLUDES	YEAR
031	Charade		90-92
398	Other automobile		-
399	Unknown automobile		-
401	Rocky		90-92
498	Other light truck		-
499	Unknown light truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**61 STERLING**

CODE	MODEL	INCLUDES	YEAR
031	827S	Li	86-91
398	Other automobile		-
399	Unknown automobile		-
998	Other vehicle		-
999	Unknown vehicle		-

**62 ROVER**

CODE	MODEL	INCLUDES	YEAR
401	Discovery (LR)		94-on
402	Defender 90 (LR)		94-on
421	County LWB (RR)/County Classis (RR)		all
422	Defender 90 (LR)		
422	4.0 SE (RR)		95-on
498	Other Light Truck		all
499	Unknown Light Truck		all
998	Other vehicle		-
999	Unknown vehicle		-

**63 KIA**

CODE	MODEL	INCLUDES	YEAR
031	Sephia		all
032	Spectra		-
033	Rio		-
034	Optima		-
035	Amanti		-
398	Other automobile		-
399	Unknown automobile		-
401	Sportage		96-on
402	Sorrento		-
441	Sedona		-
498	Other Light Truck		-
499	Unknown Light Truck		-
998	Other vehicle		-
999	Unknown vehicle		-

**64 Daewoo**

CODE	MODEL	INCLUDES	YEAR
031	Lanos		
032	Nubira		
033	Leganza		
398	Other Automobile		
399	Unknown Automobile		
999		Other Vehicle	-

**65 MINI**

CODE	MODEL	INCLUDES	YEAR
031	Cooper		

**69 OTHER FOREIGN**

CODE	MODEL	INCLUDES	YEAR
031	Aston Martin	Lagonda, Vantage, Volante, Saloon	all
032	Bricklin		all
033	Citreon		all
034	Delorean		all
035	Ferrari		all
036	Hillman		all
037	Jensen	Healy	all
038	Lamborghini	Countach 5000S, Jalpa	all
039	Lotus	Europe, Esprit	all
040	Maserati	Biturbo	all
041	Morris	Minor	all
042	Rolls Royce/Bentley	Cloud/shadow series	all
044	Simca		all
045	Sunbeam		all
046	TVR		all

048	Desta		all
049	Reliant		all
052	Bertone	X/19	all
053	Lada		all
398	Other make	Morgan, Singer	all
399	Unknown make		-

**82 FREIGHTLINER/WHITE**

CODE	MODEL	INCLUDES	YEAR
461	Sprinter/Advantage		
470	M-Line Walk-in Van		
498	Other Light Truck		
850	Truck based motorhome		
881	Medium Heavy - CBE		all
882	Medium/Heavy COE low entry		all
883	Medium/Heavy COE high entry		all
884	Medium/Heavy unknown engine location		-
890	Medium/Heavy COE entry position unknown		-
898	Other medium/heavy truck		all
899	Unknown medium/heavy truck		-
981	Conventional bus		all
982	Bus-flat front, front engine		all
983	Bus-flat front, rear engine		all
988	Other bus		-
989	Unknown bus		-
999	Unknown vehicle		-

**84 INTERNATIONAL HARVESTER**

CODE	MODEL	INCLUDES	YEAR
421	Scout	Scout II, Utility pickup, SS-2, Roadstar, 800 series, Traveler, Terra Traveltop	all
431	Travelall	1010-1210, 100-200	all
466	Multistop Van	Metro RM, 120-160, MS 1210, MS 1510	all
481	Pickup	R-100-500, 900A-1 500C/D, 1010-1510	all
498	Other light truck		
499	Unknown light truck		
850	Truck based motorhome		
881	Medium Heavy - CBE	Loadstar/Fleetstar, Paystar, CBE Transtar, 4200, S-series Mixer	all
882	Medium/Heavy COE low entry	CO, VCO, DCO, 190-1950, Cargostar, LFM, 5370	all
883	Medium/Heavy COE high entry	DCO, DCOT, UCO, VCOT, 405-series, COE Transtar, Unistar, Conco 707B, 9600	all
884	Medium/Heavy	unknown engine location	-
890	Medium/Heavy COE	entry position unknown	-
898	Other medium/heavy truck	firetruck-RI40-R301, C08190	all
899	Unknown medium/heavy truck		-
950	Bus based Motorhome		all

981	Conventional bus	RI53-1853 - Loadstar, 1603-1853	all
982	Bus-flat front, front engine	173FC, 183FC	all
983	Bus-flat front, rear engine	183RE, 193RE-transit	all
988	Other bus		-
989	Unknown bus		-
998	Other vehicle		-
999	Unknown vehicle		-



**Classification for Motored Cycles and All Terrain Vehicles / Cycles**

<b>Vehicle Make</b>	<b>MC</b>	<b>ATC</b>	<b>ATV</b>	<b>Make Code</b>
BMW	x			34
Honda	x	x	x	37
Peugeot	x			44
Triumph	x			50
Suzuki	x	x	x	53
BSA	x			70
Ducati	x			71
Harley-Davidson	x			72
Kawasaki	x	x	x	73
Moto-Guzzi	x		x	74
Norton	x			75
Yamaha	x	x	x	76
Other make moped	x			78
Other make motorized cycle	x	x	x	79
Unknown make				99

The following model codes are used for all manufacturers of motored cycles and all terrain vehicles/cycles:

**Motored Cycles:**

0-50cc	701
51-124cc	702
125-349cc	703
350-449cc	704
450-749cc	705
750cc-or greater	706
Unknown cc	709

**All Terrain Vehicles/Cycles:**

0-50cc	731
51-124cc	732
125-349cc	733
350cc or greater	734
Unknown cc	739

**All Cycles:**

Other motored cycle	798
Unknown motored cycle	799

### Classification for Medium/Heavy Trucks and Buses

Vehicle Make	Truck	Bus	Make Code
AM General	x	x	03
Dodge	x	x	07
Ford	x	x	12
Chevrolet	x	x	20
GMC	x	x	23
Grumman	x	x	25
Nissan/Datsun	x		35
Fiat	x		36
Isuzu	x	x	38
Mercedes Benz	x	x	42
Volvo	x	x	51
Mitsubishi	x		52
Brockway	x		80
Diamond Reo/Reo	x		81
Freightliner/White	x		82
FWD	x		83
International Harvester/ Navistar	x	x	84
Kenworth	x		85
Mack	x		86
Peterbilt	x		87
Iveco/Magirus	x		88
Other Make			98

### Other Truck and Bus Makes:

For Make=98 (Other Medium/Heavy Trucks/ Buses, and Other Vehicle Makes), the following Model codes represent other truck and bus makes or types:

Autocar	801
Auto-Union-DKW	802
Divco	803
Western Star	804
Oshkosh	805
Hino	806
Scania	807
Truck based motorhome	850
Other truck (e.g., Marmon, Ward LaFrance)	898
Neoplan (bus)	902
Bus based motorhome	950
Other bus (e.g., Blue Bird, Chance Coach)	988
Unknown bus	989
Other vehicle (e.g. farm vehicle, go-cart)	998
Unknown Vehicle	999

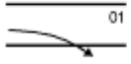
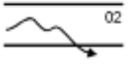
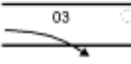
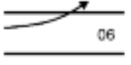
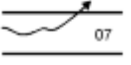
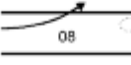
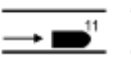
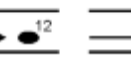
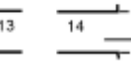



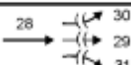
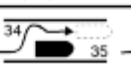
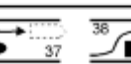
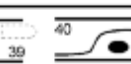

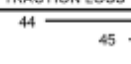
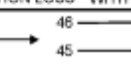
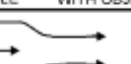

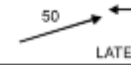



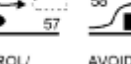
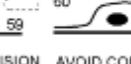






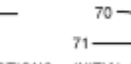
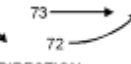
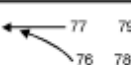










Truck and Bus Models:

**Codes for medium and heavy truck models and bus models are shown below. These codes are used for all manufacturers of medium/heavy trucks and buses:**

Truck based motorhome	850
Medium/Heavy CBE	881
Medium/Heavy COE-low entry	882

Medium/Heavy COE-high entry	883
Medium/Heavy Unknown engine location	884
Medium/Heavy COE-entry position unknown	890
Medium/Heavy - Other	898
Unknown light/medium/heavy truck	899
Bus based motorhome	950
Bus-conventional front engine	981
Bus - front engine/flat front	982
Bus - rear engine/flat front	983
Other Bus (e.g. Blue Bird, Chance Coach)	988
Unknown Bus	989

## APPENDIX B: V23 Accident Type Diagram

Category	Configuration	ACCIDENT TYPES (Includes Intent)					
I. Single Driver	A. Right Roadside Departure				04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN	
	B. Left Roadside Departure				09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN	
	C. Forward Impact					15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II. Same Trafficway Same Direction	D. Rear-End				(EACH - 32) SPECIFICS OTHER	(EACH - 33) SPECIFICS UNKNOWN	
	E. Forward Impact					(EACH - 42) SPECIFICS OTHER	(EACH - 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle					(EACH - 48) SPECIFICS OTHER	(EACH - 49) SPECIFICS UNKNOWN
III. Same Trafficway Opposite Direction	G. Head-On				(EACH - 52) SPECIFICS OTHER	(EACH - 53) SPECIFICS UNKNOWN	
	H. Forward Impact					(EACH - 62) SPECIFICS OTHER	(EACH - 63) SPECIFICS UNKNOWN
	I. Sideswipe/Angle					(EACH - 66) SPECIFICS OTHER	(EACH - 67) SPECIFICS UNKNOWN
IV. Change Trafficway Vehicle Turning	J. Turn Across Path				(EACH - 74) SPECIFICS OTHER	(EACH - 75) SPECIFICS UNKNOWN	
	K. Turn Into Path					(EACH - 84) SPECIFICS OTHER	(EACH - 85) SPECIFICS UNKNOWN
V. Intersecting Paths (Vehicle Damage)	L. Straight Paths				(EACH - 90) SPECIFICS OTHER	(EACH - 91) SPECIFICS UNKNOWN	
VI. Miscellaneous Etc.	M. Backing Etc.					98 OTHER ACCIDENT TYPE 99 UNKNOWN ACCIDENT TYPE 00 NO IMPACT	

## APPENDIX C: Summary Statistics

The following two tables provides a summary of descriptive statistics from the GES data data sets. Table 1 represents the actual number of records or unweighted sample and Table 2 represents the national estimates or weighted sample for the given descriptive from 1988 - 2004. These statistics will provide the user with a benchmark to compare against numbers obtained from the analytical data sets.

**Table 1: Unweighted Sample**

<i>Year</i>	<i>Crashes</i>	<i>Vehicles</i>	<i>People</i>	<i>Drivers</i>	<i>Occupants</i>	<i>Pedestrians</i>	<i>Pedalcyclists</i>
<b>1988</b>	48,831	83,633	122,738	82,708	119,914	1,554	1,021
<b>1989</b>	44,105	74,778	110,896	74,354	107,447	1,880	1,315
<b>1990</b>	46,290	80,154	117,141	79,716	113,439	1,995	1,468
<b>1991</b>	42,600	73,833	108,955	73,481	105,580	1,723	1,348
<b>1992</b>	46,197	80,566	118,933	80,152	115,346	1,891	1,415
<b>1993</b>	55,644	96,544	143,525	96,209	138,759	2,589	1,845
<b>1994</b>	55,759	97,441	143,743	97,109	139,221	2,442	1,715
<b>1995</b>	53,749	95,803	140,512	95,477	136,890	1,909	1,336
<b>1996</b>	56,030	100,861	147,903	100,500	144,332	1,820	1,305
<b>1997</b>	55,562	100,032	145,890	99,688	142,366	1,838	1,266
<b>1998</b>	54,006	97,362	141,372	97,074	138,545	1,593	1,165
<b>1999</b>	52,913	94,846	137,048	94,549	134,095	1,736	1,108
<b>2000</b>	57,382	102,551	146,596	102,268	143,530	1,703	1,128
<b>2001</b>	55,964	100,161	143,281	99,893	140,147	1,732	1,005
<b>2002</b>	54,291	96,424	139,614	96,070	136,362	1,734	1,154
<b>2003</b>	59,156	105,295	151,167	104,951	147,730	1,895	1,122
<b>2004</b>	60,974	108,413	156,143	108,119	152,428	2,014	1,280

*Drivers:* PER\_TYPE = 1  
*Occupants:* PER\_TYPE IN (1,2,9)  
*Pedestrians:* PER\_TYPE = 5  
*Pedalcyclists:* PER\_TYPE = 6

**Table 2: Weighted Sample**

<b>Year</b>	<b>Crashes</b>	<b>Vehicles</b>	<b>People</b>	<b>Drivers</b>	<b>Occupants</b>	<b>Pedestrians</b>	<b>Pedalcyclists</b>
<b>1988</b>	6,876,780	12,007,970	17,247,886	11,851,683	17,005,088	121,474	82,535
<b>1989</b>	6,644,549	11,556,267	16,612,033	11,485,928	16,361,647	121,403	85,193
<b>1990</b>	6,462,126	11,315,087	16,298,795	11,252,874	16,061,886	116,405	86,059
<b>1991</b>	6,109,931	10,711,298	15,593,416	10,658,830	15,368,100	98,849	77,045
<b>1992</b>	5,992,938	10,535,596	15,339,372	10,485,244	15,136,291	94,646	71,084
<b>1993</b>	6,094,772	10,725,032	15,767,005	10,688,211	15,546,338	102,261	78,438
<b>1994</b>	6,489,122	11,487,378	16,836,682	11,451,723	16,617,814	101,781	70,862
<b>1995</b>	6,690,061	11,979,882	17,517,709	11,937,794	17,309,929	92,350	74,751
<b>1996</b>	6,761,051	12,082,760	17,704,717	12,043,981	17,490,909	89,992	67,892
<b>1997</b>	6,611,906	11,834,167	17,280,356	11,798,756	17,083,876	83,174	64,599
<b>1998</b>	6,325,242	11,386,502	16,521,887	11,354,181	16,338,158	73,829	59,581
<b>1999</b>	6,271,524	11,220,598	16,068,665	11,182,321	15,910,909	90,768	56,668
<b>2000</b>	6,389,310	11,346,184	16,113,394	11,317,668	15,952,464	83,156	56,350
<b>2001</b>	6,314,117	11,187,914	15,914,491	11,159,551	15,732,540	83,129	50,730
<b>2002</b>	6,304,493	11,168,656	15,737,226	11,129,037	15,569,434	74,491	51,684
<b>2003</b>	6,317,752	11,175,816	15,756,262	11,142,663	15,588,774	74,335	51,028
<b>2004</b>	6,169,998	10,945,334	15,341,895	10,916,913	15,183,714	73,478	44,436

*Drivers:* PER\_TYPE = 1  
*Occupants:* PER\_TYPE IN (1,2,9)  
*Pedestrians:* PER\_TYPE = 5  
*Pedalcyclists:* PER\_TYPE = 6

## **APPENDIX D: Statistical Methods**

### **National Estimates:**

The national estimates produced from the GES data may differ from the true population values because they are based on a probability sample of police-reported crashes that involve injury or major property damage, rather than a census of these types of crashes. The size of these differences may vary depending on the makeup of the sample which is selected. The standard error of an estimate is a measure of the precision or reliability with which an estimate from this particular GES sample approximates the result of a census.

### **Generalized Estimated Sampling Errors**

It is impractical to compute and provide a standard error for each national estimate. Instead, generalized standard errors for estimates of totals are presented in the following tables for 1988 to the current GES year. The following steps produced the generalized standard errors:

1. The standard errors for selected estimates were calculated using Taylor series approximations. Generalized standard errors were calculated separately for crash, vehicle, and person characteristics.
2. Using regression techniques, three equations were found that best fit the separate standard errors for crash, vehicle, and person estimates.
3. The equations were used to generate approximate standard errors for the three types of estimates.

The GES estimates and an estimate of one standard error are given in the following tables. By adding and subtracting the standard error to the associated estimate, a 95 percent confidence interval for an estimate can be created.

For example, if the estimated number of injured or killed pedestrians in 1995 was 90,000 (rounded to the nearest 1,000). To calculate one standard error for this person estimate, use the table on page 205. Look under the Person Estimate column for the value of 90,000. Look under the Person Standard Error column to the right for the corresponding person error value. For the person estimate of 90,000 the person standard error value is 7,100. The 95 percent confidence interval for this estimate would be approximately  $90,000 + \text{or} - 1.96 * (7,100)$  or 76,000 to 104,000.

If the person estimate falls between the values shown on the table linear interpolation will be required. For example, had the person estimate been 92,000 instead of 90,000 the person standard error would need to be calculated. Use linear interpolation from the standard error values for 90,000 and 100,000. One approximate standard error would be  $7,100 + 120 = 7,220$ . The 95 percent confidence interval for this estimate would be approximately  $92,000 + \text{or} - 1.96 * (7,220)$  or 78,000 to 106,000.

More information on standard error estimates can be obtained from the National Center for Statistics and Analysis.

## 1988 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	500
5,000	1,400	5,000	1,200	5,000	1,200
10,000	2,100	10,000	1,800	10,000	1,800
20,000	3,200	20,000	2,900	20,000	2,900
30,000	4,200	30,000	3,800	30,000	3,800
40,000	5,200	40,000	4,700	40,000	4,700
50,000	6,100	50,000	5,500	50,000	5,600
60,000	6,900	60,000	6,300	60,000	6,400
70,000	7,800	70,000	7,100	70,000	7,200
80,000	8,600	80,000	7,900	80,000	8,000
90,000	9,400	90,000	8,600	90,000	8,800
100,000	10,200	100,000	9,400	100,000	9,500
200,000	17,600	200,000	16,500	200,000	17,000
300,000	24,600	300,000	23,400	300,000	24,200
400,000	31,400	400,000	30,100	400,000	31,300
500,000	38,100	500,000	36,700	500,000	38,300
600,000	44,800	600,000	43,400	600,000	45,400
700,000	51,300	700,000	50,000	700,000	52,500
800,000	57,900	800,000	56,600	800,000	59,500
900,000	64,400	900,000	63,200	900,000	66,600
1,000,000	71,000	1,000,000	69,900	1,000,000	73,800
1,500,000	103,700	2,000,000	137,400	2,000,000	146,800
2,000,000	136,500	3,000,000	207,300	3,000,000	223,000
2,500,000	169,600	4,000,000	279,300	4,000,000	302,200
3,000,000	203,100	5,000,000	353,400	5,000,000	384,000
3,500,000	236,900	6,000,000	429,500	6,000,000	468,200
4,000,000	271,000	7,000,000	507,300	7,000,000	554,700
4,500,000	305,400	8,000,000	586,800	8,000,000	643,300
5,000,000	340,200	9,000,000	667,900	9,000,000	733,900
5,500,000	375,400	10,000,000	750,500	10,000,000	826,300
6,000,000	410,800	11,000,000	834,500	11,000,000	920,600
7,000,000	482,600	12,000,000	919,900	12,000,000	1,016,600
$* SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.63$ $b = .067$		$** SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.16$ $b = .069$		$*** SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.04$ $b = .070$	



## 1989 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	500
5,000	1,400	5,000	1,200	5,000	1,200
10,000	2,100	10,000	1,800	10,000	1,800
20,000	3,200	20,000	2,900	20,000	2,900
30,000	4,200	30,000	3,800	30,000	3,800
40,000	5,200	40,000	4,700	40,000	4,700
50,000	6,100	50,000	5,500	50,000	5,600
60,000	6,900	60,000	6,300	60,000	6,400
70,000	7,800	70,000	7,100	70,000	7,200
80,000	8,600	80,000	7,900	80,000	8,000
90,000	9,400	90,000	8,600	90,000	8,800
100,000	10,200	100,000	9,400	100,000	9,500
200,000	17,600	200,000	16,500	200,000	17,000
300,000	24,600	300,000	23,400	300,000	24,200
400,000	31,400	400,000	30,100	400,000	31,300
500,000	38,100	500,000	36,700	500,000	38,300
600,000	44,800	600,000	43,400	600,000	45,400
700,000	51,300	700,000	50,000	700,000	52,500
800,000	57,900	800,000	56,600	800,000	59,500
900,000	64,400	900,000	63,200	900,000	66,600
1,000,000	71,000	1,000,000	69,900	1,000,000	73,800
1,500,000	103,700	2,000,000	137,400	2,000,000	146,800
2,000,000	136,500	3,000,000	207,300	3,000,000	223,000
2,500,000	169,600	4,000,000	279,300	4,000,000	302,200
3,000,000	203,100	5,000,000	353,400	5,000,000	384,000
3,500,000	236,900	6,000,000	429,500	6,000,000	468,200
4,000,000	271,000	7,000,000	507,300	7,000,000	554,700
4,500,000	305,400	8,000,000	586,800	8,000,000	643,300
5,000,000	340,200	9,000,000	667,900	9,000,000	733,900
5,500,000	375,400	10,000,000	750,500	10,000,000	826,300
6,000,000	410,800	11,000,000	834,500	11,000,000	920,600
7,000,000	482,600	12,000,000	919,900	12,000,000	1,016,600
$* SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.63$ $b = .067$		$** SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.16$ $b = .069$		$*** SE = e^{a/2+b/2(\ln X)^{**2}}, \text{where}$ $a = 9.04$ $b = .070$	

## 1990 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	700	1,000	400	1,000	400
5,000	1,400	5,000	1,000	5,000	1,000
10,000	2,100	10,000	1,600	10,000	1,500
20,000	3,300	20,000	2,500	20,000	2,400
30,000	4,200	30,000	3,400	30,000	3,100
40,000	5,100	40,000	4,200	40,000	3,900
50,000	5,900	50,000	4,900	50,000	4,500
60,000	6,800	60,000	5,700	60,000	5,200
70,000	7,500	70,000	6,400	70,000	5,800
80,000	8,300	80,000	7,100	80,000	6,500
90,000	9,000	90,000	7,800	90,000	7,100
100,000	9,700	100,000	8,500	100,000	7,700
200,000	16,400	200,000	15,000	200,000	13,400
300,000	22,600	300,000	21,300	300,000	18,900
400,000	28,600	400,000	27,500	400,000	24,300
500,000	34,400	500,000	33,700	500,000	29,600
600,000	40,000	600,000	39,900	600,000	34,800
700,000	45,700	700,000	46,100	700,000	40,100
800,000	51,200	800,000	52,200	800,000	45,300
900,000	56,700	900,000	58,400	900,000	50,600
1,000,000	62,200	1,000,000	64,700	1,000,000	55,800
1,500,000	116,200	2,000,000	128,300	2,000,000	108,800
2,000,000	169,800	3,000,000	194,500	3,000,000	163,200
2,500,000	223,700	4,000,000	263,100	4,000,000	219,100
3,000,000	278,000	5,000,000	334,000	5,000,000	276,400
3,500,000	332,800	6,000,000	406,900	6,000,000	335,200
4,000,000	388,100	7,000,000	481,600	7,000,000	394,900
4,500,000	444,000	8,000,000	558,200	8,000,000	455,900
5,000,000	500,400	9,000,000	636,400	9,000,000	518,100
5,500,000	557,300	10,000,000	716,100	10,000,000	581,300
6,000,000	614,700	11,000,000	797,400	11,000,000	645,500
7,000,000	672,500	12,000,000	808,100	12,000,000	710,600
$* SE = e^{(a/2)+(b/2)(\ln(x))^2}$ , where $a = 9.93401$ $b = 0.06362$		$** SE = e^{(a/2)+(b/2)(\ln(x))^2}$ , where $a = 8.83524$ $b = 0.06977$		$*** SE = e^{(a/2)+(b/2)(\ln(x))^2}$ , where $a = 8.88000$ $b = 0.06800$	

## 1991 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	600	1,000	500	1,000	400
5,000	1,400	5,000	1,100	5,000	1,000
10,000	2,100	10,000	1,600	10,000	1,500
20,000	3,200	20,000	2,600	20,000	2,400
30,000	4,200	30,000	3,500	30,000	3,200
40,000	5,000	40,000	4,300	40,000	4,000
50,000	5,900	50,000	5,000	50,000	4,700
60,000	6,700	60,000	5,800	60,000	5,400
70,000	7,500	70,000	6,500	70,000	6,100
80,000	8,200	80,000	7,200	80,000	6,800
90,000	9,000	90,000	7,900	90,000	7,500
100,000	9,700	100,000	8,600	100,000	8,200
200,000	16,500	200,000	15,200	200,000	14,600
300,000	22,800	300,000	21,600	300,000	20,900
400,000	29,000	400,000	27,800	400,000	27,200
500,000	34,900	500,000	34,000	500,000	33,400
600,000	40,800	600,000	40,200	600,000	39,700
700,000	46,600	700,000	46,400	700,000	46,000
800,000	52,400	800,000	52,600	800,000	52,300
900,000	58,100	900,000	58,900	900,000	58,600
1,000,000	63,800	1,000,000	65,100	1,000,000	65,000
2,000,000	120,300	2,000,000	128,600	2,000,000	130,600
3,000,000	176,900	3,000,000	194,600	3,000,000	199,700
4,000,000	234,000	4,000,000	262,900	4,000,000	271,800
5,000,000	291,700	5,000,000	333,200	5,000,000	346,600
6,000,000	350,200	6,000,000	405,500	6,000,000	423,900
7,000,000	409,400	7,000,000	479,600	7,000,000	503,500
8,000,000	469,300	8,000,000	555,400	8,000,000	585,200
9,000,000	529,900	9,000,000	632,700	9,000,000	668,900
10,000,000	591,100	10,000,000	711,600	10,000,000	754,500
11,000,000	652,900	11,000,000	791,900	11,000,000	842,000
12,000,000	715,400	12,000,000	873,600	12,000,000	931,100
$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.900441$ $b = 0.032292$		$** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.460186$ $b = 0.034701$		$*** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.291460$ $b = 0.035576$	

## 1992 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,200
8,000	1,400	30,000	3,300	30,000	3,000
9,000	1,600	40,000	4,100	40,000	3,700
10,000	1,700	50,000	4,800	50,000	4,400
20,000	2,700	60,000	5,600	60,000	5,100
30,000	3,600	70,000	6,300	70,000	5,800
40,000	4,400	80,000	7,000	80,000	6,500
50,000	5,200	90,000	7,700	90,000	7,200
60,000	6,000	100,000	8,400	100,000	7,800
70,000	6,800	200,000	15,200	200,000	14,200
80,000	7,600	300,000	21,800	300,000	20,600
90,000	8,300	400,000	28,300	400,000	26,900
100,000	9,100	500,000	34,900	500,000	33,200
200,000	16,200	600,000	41,500	600,000	39,600
300,000	23,200	700,000	48,100	700,000	46,000
400,000	30,100	800,000	54,700	800,000	52,400
500,000	36,900	900,000	61,400	900,000	59,000
600,000	43,800	1,000,000	68,100	1,000,000	65,500
700,000	50,700	2,000,000	137,500	2,000,000	134,100
800,000	57,600	3,000,000	210,800	3,000,000	207,100
900,000	64,600	4,000,000	287,500	4,000,000	284,000
1,000,000	71,600	5,000,000	367,200	5,000,000	364,400
2,000,000	143,600	6,000,000	449,700	6,000,000	447,900
3,000,000	219,200	7,000,000	534,700	7,000,000	534,200
4,000,000	298,000	8,000,000	622,100	8,000,000	623,200
5,000,000	379,700	9,000,000	711,700	9,000,000	714,700
6,000,000	464,000	10,000,000	803,400	10,000,000	808,500
6,500,000	507,100	11,000,000	897,100	11,000,000	904,600
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.413218$ $b = 0.035447$		** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.294210$ $b = 0.035807$		*** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.132995$ $b = 0.036452$	

## 1993 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,400	20,000	2,200
8,000	1,400	30,000	3,200	30,000	3,000
9,000	1,500	40,000	4,000	40,000	3,700
10,000	1,600	50,000	4,700	50,000	4,400
20,000	2,600	60,000	5,400	60,000	5,100
30,000	3,500	70,000	6,100	70,000	5,700
40,000	4,300	80,000	6,800	80,000	6,400
50,000	5,100	90,000	7,500	90,000	7,000
60,000	5,800	100,000	8,100	100,000	7,600
70,000	6,600	200,000	14,600	200,000	13,700
80,000	7,300	300,000	20,900	300,000	19,600
90,000	8,000	400,000	27,100	400,000	25,400
100,000	8,700	500,000	33,300	500,000	31,300
200,000	15,600	600,000	39,500	600,000	37,100
300,000	22,300	700,000	45,800	700,000	43,000
400,000	29,000	800,000	52,100	800,000	48,900
500,000	35,600	900,000	58,400	900,000	54,800
600,000	42,200	1,000,000	64,700	1,000,000	60,800
700,000	48,800	2,000,000	130,200	2,000,000	122,200
800,000	55,400	3,000,000	199,100	3,000,000	186,900
900,000	62,100	4,000,000	271,000	4,000,000	254,400
1,000,000	68,800	5,000,000	345,600	5,000,000	324,400
2,000,000	137,800	6,000,000	422,700	6,000,000	396,800
3,000,000	210,100	7,000,000	502,000	7,000,000	471,300
4,000,000	285,500	8,000,000	583,500	8,000,000	547,800
5,000,000	363,600	9,000,000	667,000	9,000,000	626,200
6,000,000	444,100	10,000,000	752,400	10,000,000	706,300
6,500,000	485,200	11,000,000	839,600	11,000,000	788,200
7,000,000	526,900	12,000,000	928,600	12,000,000	871,700
$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.388598$ $b = 0.035368$		$** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.285811$ $b = 0.035587$		$*** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.222608$ $b = 0.035587$	

## 1994 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,500	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,400	30,000	3,300	30,000	3,100
9,000	1,500	40,000	4,200	40,000	3,800
10,000	1,600	50,000	4,900	50,000	4,500
20,000	2,600	60,000	5,700	60,000	5,200
30,000	3,500	70,000	6,500	70,000	5,900
40,000	4,400	80,000	7,200	80,000	6,500
50,000	5,200	90,000	7,900	90,000	7,200
60,000	6,000	100,000	8,600	100,000	7,800
70,000	6,700	200,000	15,600	200,000	14,100
80,000	7,500	300,000	22,500	300,000	20,300
90,000	8,300	400,000	29,300	400,000	26,400
100,000	9,000	500,000	36,100	500,000	32,600
200,000	16,300	600,000	42,900	600,000	38,700
300,000	23,300	700,000	49,800	700,000	44,900
400,000	30,400	800,000	56,800	800,000	51,100
500,000	37,400	900,000	63,700	900,000	57,400
600,000	44,500	1,000,000	70,800	1,000,000	63,700
700,000	51,500	2,000,000	143,700	2,000,000	128,900
800,000	58,700	3,000,000	220,900	3,000,000	197,800
900,000	65,900	4,000,000	301,900	4,000,000	270,000
1,000,000	73,100	5,000,000	386,300	5,000,000	345,200
2,000,000	147,900	6,000,000	473,700	6,000,000	422,900
3,000,000	227,000	7,000,000	564,000	7,000,000	503,100
4,000,000	309,800	8,000,000	656,800	8,000,000	585,600
5,000,000	395,900	9,000,000	752,200	9,000,000	670,300
6,000,000	485,000	10,000,000	849,800	10,000,000	756,900
6,500,000	530,700	11,000,000	949,700	11,000,000	845,500
7,000,000	577,000	12,000,000	1,051,700	12,000,000	935,900
$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.347699$ $b = 0.035898$		$** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.283883$ $b = 0.036063$		$*** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.206542$ $b = 0.035915$	

## 1995 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	900
6,000	1,200	10,000	1,600	10,000	1,400
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,400	30,000	3,300	30,000	3,100
9,000	1,500	40,000	4,200	40,000	3,800
10,000	1,600	50,000	4,900	50,000	4,500
20,000	2,600	60,000	5,700	60,000	5,100
30,000	3,500	70,000	6,400	70,000	5,800
40,000	4,300	80,000	7,100	80,000	6,400
50,000	5,100	90,000	7,800	90,000	7,100
60,000	5,900	100,000	8,500	100,000	7,700
70,000	6,600	200,000	15,300	200,000	13,700
80,000	7,400	300,000	22,000	300,000	19,600
90,000	8,100	400,000	28,500	400,000	25,300
100,000	8,800	500,000	35,100	500,000	31,000
200,000	15,800	600,000	41,700	600,000	36,800
300,000	22,700	700,000	48,200	700,000	42,500
400,000	29,400	800,000	54,900	800,000	48,300
500,000	36,200	900,000	61,500	900,000	54,000
600,000	43,000	1,000,000	68,200	1,000,000	59,800
700,000	49,800	2,000,000	137,300	2,000,000	119,300
800,000	56,600	3,000,000	210,100	3,000,000	181,500
900,000	63,500	4,000,000	286,100	4,000,000	246,100
1,000,000	70,400	5,000,000	365,000	5,000,000	313,000
2,000,000	141,700	6,000,000	446,500	6,000,000	381,900
3,000,000	216,800	7,000,000	530,400	7,000,000	452,600
4,000,000	295,200	8,000,000	616,700	8,000,000	525,100
5,000,000	376,500	9,000,000	705,000	9,000,000	599,300
6,000,000	460,600	10,000,000	795,400	10,000,000	675,100
6,500,000	503,600	11,000,000	887,700	11,000,000	752,300
7,000,000	547,200	12,000,000	981,900	12,000,000	831,000
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.362086$ $b = 0.035627$		** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.329914$ $b = 0.035631$		*** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.289002$ $b = 0.035157$	

## 1996 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)*	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	500	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	1,000
6,000	1,200	10,000	1,600	10,000	1,500
7,000	1,300	20,000	2,500	20,000	2,300
8,000	1,500	30,000	3,300	30,000	3,100
9,000	1,600	40,000	4,100	40,000	3,800
10,000	1,700	50,000	4,900	50,000	4,400
20,000	2,600	60,000	5,600	60,000	5,100
30,000	3,500	70,000	6,300	70,000	5,700
40,000	4,300	80,000	7,000	80,000	6,300
50,000	5,000	90,000	7,700	90,000	6,900
60,000	5,800	100,000	8,400	100,000	7,500
70,000	6,500	200,000	14,900	200,000	13,100
80,000	7,200	300,000	21,300	300,000	18,500
90,000	7,900	400,000	27,500	400,000	23,700
100,000	8,500	500,000	33,800	500,000	28,900
200,000	15,000	600,000	40,000	600,000	34,100
300,000	21,100	700,000	46,200	700,000	39,200
400,000	27,100	800,000	52,500	800,000	44,300
500,000	33,100	900,000	58,800	900,000	49,400
600,000	39,000	1,000,000	65,100	1,000,000	54,600
700,000	44,900	2,000,000	129,800	2,000,000	106,400
800,000	50,800	3,000,000	197,400	3,000,000	159,600
900,000	56,700	4,000,000	267,600	4,000,000	214,300
1,000,000	62,700	5,000,000	340,300	5,000,000	270,300
2,000,000	122,600	6,000,000	415,200	6,000,000	327,700
3,000,000	184,300	7,000,000	492,100	7,000,000	386,200
4,000,000	247,800	8,000,000	570,900	8,000,000	445,900
5,000,000	313,000	9,000,000	651,500	9,000,000	506,700
6,000,000	379,800	10,000,000	733,900	10,000,000	568,500
6,500,000	413,700	11,000,000	817,800	11,000,000	631,300
7,000,000	448,000	12,000,000	903,300	12,000,000	695,100
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.521508$ $b = 0.034180$		** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.374631$ $b = 0.035149$		*** $SE = e^{a+b(\ln X)^2}$ , where $a = 4.417590$ $b = 0.034001$	



## 1997 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,100	5,000	1,000	5,000	1,000
6,000	1,200	10,000	1,600	10,000	1,600
7,000	1,300	20,000	2,500	20,000	2,500
8,000	1,400	30,000	3,300	30,000	3,300
9,000	1,500	40,000	4,100	40,000	4,100
10,000	1,600	50,000	4,900	50,000	4,800
20,000	2,600	60,000	5,600	60,000	5,600
30,000	3,500	70,000	6,400	70,000	6,300
40,000	4,300	80,000	7,100	80,000	7,000
50,000	5,100	90,000	7,800	90,000	7,700
60,000	5,900	100,000	8,500	100,000	8,300
70,000	6,600	200,000	15,200	200,000	14,800
80,000	7,400	300,000	21,800	300,000	21,000
90,000	8,100	400,000	28,300	400,000	27,200
100,000	8,800	500,000	34,800	500,000	33,300
200,000	15,700	600,000	41,300	600,000	39,400
300,000	22,400	700,000	47,800	700,000	45,600
400,000	29,000	800,000	54,400	800,000	51,700
500,000	35,500	900,000	60,900	900,000	57,800
600,000	42,100	1,000,000	67,600	1,000,000	64,000
700,000	48,600	2,000,000	135,900	2,000,000	127,200
800,000	55,200	3,000,000	207,700	3,000,000	193,100
900,000	61,800	4,000,000	282,600	4,000,000	261,400
1,000,000	68,500	5,000,000	360,400	5,000,000	332,000
2,000,000	136,500	6,000,000	440,800	6,000,000	404,700
3,000,000	207,600	7,000,000	523,500	7,000,000	479,300
4,000,000	281,500	8,000,000	608,400	8,000,000	555,700
5,000,000	358,000	9,000,000	695,500	9,000,000	633,700
6,000,000	436,800	10,000,000	784,500	10,000,000	713,400
6,500,000	477,000	11,000,000	875,300	11,000,000	794,600
7,000,000	517,000	12,000,000	968,000	12,000,000	877,200
$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.424135$ $b = 0.035154$		$** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.331394$ $b = 0.035572$		$*** SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.390740$ $b = 0.034978$	

## 1998 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	500
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,600
7,000	1,300	20,000	2,500	20,000	2,400
8,000	1,400	30,000	3,300	30,000	3,200
9,000	1,500	40,000	4,000	40,000	3,900
10,000	1,600	50,000	4,800	50,000	4,600
20,000	2,500	60,000	5,500	60,000	5,200
30,000	3,300	70,000	6,200	70,000	5,900
40,000	4,100	80,000	6,900	80,000	6,500
50,000	4,900	90,000	7,500	90,000	7,100
60,000	5,600	100,000	8,200	100,000	7,700
70,000	6,300	200,000	14,600	200,000	13,200
80,000	7,000	300,000	20,800	300,000	18,400
90,000	7,600	400,000	26,800	400,000	23,500
100,000	8,300	500,000	32,900	500,000	28,500
200,000	14,700	600,000	38,900	600,000	33,400
300,000	20,900	700,000	45,000	700,000	38,300
400,000	27,000	800,000	51,100	800,000	43,100
500,000	33,000	900,000	57,100	900,000	48,000
600,000	39,000	1,000,000	63,200	1,000,000	52,800
700,000	45,000	2,000,000	125,800	2,000,000	101,200
800,000	51,100	3,000,000	191,000	3,000,000	150,200
900,000	57,100	4,000,000	258,600	4,000,000	200,200
1,000,000	63,200	5,000,000	328,600	5,000,000	251,000
2,000,000	125,000	6,000,000	400,500	6,000,000	302,800
3,000,000	189,300	7,000,000	474,400	7,000,000	355,400
4,000,000	255,900	8,000,000	550,100	8,000,000	408,800
5,000,000	324,500	9,000,000	627,500	9,000,000	463,000
6,000,000	395,100	10,000,000	706,400	10,000,000	517,900
6,500,000	431,000	11,000,000	786,900	11,000,000	573,600
7,000,000	467,400	12,000,000	868,900	12,000,000	629,900

\*  $SE = e^{a+b(\ln X)^2}$ , where  
 $a = 4.415376$   
 $b = 0.034778$

\*  $SE = e^{a+b(\ln X)^2}$ , where  
 $a = 4.371851$   
 $b = 0.035013$

\*  $SE = e^{a+b(\ln X)^2}$ , where  
 $a = 4.551937$   
 $b = 0.033125$

## 1999 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,500
7,000	1,300	20,000	2,400	20,000	2,300
8,000	1,400	30,000	3,200	30,000	3,100
9,000	1,500	40,000	3,900	40,000	3,800
10,000	1,600	50,000	4,600	50,000	4,400
20,000	2,500	60,000	5,300	60,000	5,100
30,000	3,300	70,000	6,000	70,000	5,700
40,000	4,100	80,000	6,700	80,000	6,300
50,000	4,800	90,000	7,300	90,000	6,900
60,000	5,500	100,000	8,000	100,000	7,500
70,000	6,200	200,000	14,200	200,000	13,000
80,000	6,900	300,000	20,200	300,000	18,200
90,000	7,600	400,000	26,100	400,000	23,300
100,000	8,300	500,000	32,000	500,000	28,400
200,000	14,600	600,000	37,800	600,000	33,400
300,000	20,800	700,000	43,700	700,000	38,300
400,000	26,800	800,000	49,600	800,000	43,300
500,000	32,800	900,000	55,500	900,000	48,200
600,000	38,800	1,000,000	61,400	1,000,000	53,200
700,000	47,700	2,000,000	122,100	2,000,000	103,000
800,000	50,700	3,000,000	185,400	3,000,000	154,000
900,000	56,700	4,000,000	251,000	4,000,000	206,200
1,000,000	62,700	5,000,000	318,800	5,000,000	259,600
2,000,000	124,100	6,000,000	388,600	6,000,000	314,100
3,000,000	187,800	7,000,000	460,300	7,000,000	369,600
4,000,000	253,800	8,000,000	533,600	8,000,000	426,200
5,000,000	321,800	9,000,000	608,600	9,000,000	483,700
6,000,000	391,700	10,000,000	685,200	10,000,000	542,100
6,500,000	427,300	11,000,000	763,100	11,000,000	601,400
7,000,000	463,300	12,000,000	842,600	12,000,000	661,500
$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.414534$ $b = 0.034746$		$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.348017$ $b = 0.034987$		$* SE = e^{a+b(\ln X)^2}, \text{where}$ $a = 4.452860$ $b = 0.033682$	

## 2000 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,500
7,000	1,200	20,000	2,400	20,000	2,400
8,000	1,300	30,000	3,100	30,000	3,100
9,000	1,400	40,000	3,900	40,000	3,800
10,000	1,500	50,000	4,600	50,000	4,500
20,000	2,400	60,000	5,300	60,000	5,100
30,000	3,200	70,000	5,900	70,000	5,700
40,000	4,000	80,000	6,600	80,000	6,300
50,000	4,700	90,000	7,200	90,000	6,900
60,000	5,400	100,000	7,900	100,000	7,500
70,000	6,100	200,000	14,000	200,000	13,000
80,000	6,800	300,000	19,900	300,000	18,200
90,000	7,500	400,000	25,700	400,000	23,200
100,000	8,200	500,000	31,500	500,000	28,200
200,000	14,600	600,000	37,300	600,000	33,200
300,000	20,800	700,000	43,100	700,000	38,100
400,000	26,900	800,000	48,900	800,000	43,000
500,000	33,300	900,000	54,700	900,000	47,900
600,000	39,100	1,000,000	60,600	1,000,000	52,800
700,000	45,300	2,000,000	120,400	2,000,000	101,800
800,000	51,400	3,000,000	182,800	3,000,000	151,900
900,000	57,600	4,000,000	247,400	4,000,000	203,000
1,000,000	63,800	5,000,000	314,300	5,000,000	255,200
2,000,000	127,300	6,000,000	383,100	6,000,000	308,400
3,000,000	193,900	7,000,000	453,600	7,000,000	362,700
4,000,000	263,100	8,000,000	525,900	8,000,000	417,800
5,000,000	334,800	9,000,000	599,800	9,000,000	473,800
6,000,000	408,700	10,000,000	675,200	10,000,000	530,700
6,500,000	446,400	11,000,000	752,100	11,000,000	588,400
7,000,000	484,600	12,000,000	830,300	12,000,000	646,900
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.336620$ $b = 0.035240$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.335260$ $b = 0.034980$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.481530$ $b = 0.033490$	

## 2001 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,500	10,000	1,400
7,000	1,200	20,000	2,300	20,000	2,200
8,000	1,300	30,000	3,100	30,000	2,900
9,000	1,400	40,000	3,800	40,000	3,600
10,000	1,500	50,000	4,500	50,000	4,200
20,000	2,400	60,000	5,200	60,000	4,800
30,000	3,200	70,000	5,900	70,000	5,400
40,000	4,000	80,000	6,500	80,000	6,000
50,000	4,700	90,000	7,100	90,000	6,500
60,000	5,400	100,000	7,800	100,000	7,100
70,000	6,100	200,000	13,800	200,000	12,200
80,000	6,800	300,000	19,600	300,000	17,100
90,000	7,400	400,000	25,300	400,000	21,900
100,000	8,100	500,000	30,900	500,000	26,500
200,000	14,400	600,000	36,600	600,000	31,100
300,000	20,500	700,000	42,200	700,000	35,700
400,000	26,500	800,000	47,900	800,000	40,300
500,000	32,500	900,000	56,600	900,000	44,900
600,000	38,500	1,000,000	59,300	1,000,000	49,400
700,000	44,500	2,000,000	117,500	2,000,000	95,200
800,000	50,500	3,000,000	178,000	3,000,000	141,700
900,000	56,500	4,000,000	240,800	4,000,000	189,100
1,000,000	62,600	5,000,000	305,500	5,000,000	237,500
2,000,000	124,600	6,000,000	372,100	6,000,000	286,800
3,000,000	189,400	7,000,000	440,400	7,000,000	337,000
4,000,000	256,600	8,000,000	410,300	8,000,000	388,100
5,000,000	326,100	9,000,000	581,700	9,000,000	439,900
6,000,000	397,700	10,000,000	654,600	10,000,000	492,400
6,500,000	432,200	11,000,000	728,800	11,000,000	545,700
7,000,000	471,200	12,000,000	804,300	12,000,000	599,700
$* SE = e^{a+b(\ln X)^2}, \text{ where}$ $a = 4.350780$ $b = 0.035070$		$* SE = e^{a+b(\ln X)^2}, \text{ where}$ $a = 4.337980$ $b = 0.034850$		$* SE = e^{a+b(\ln X)^2}, \text{ where}$ $a = 4.443040$ $b = 0.033350$	

## 2002 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	1,000	5,000	1,000	5,000	1,000
6,000	1,100	10,000	1,600	10,000	1,500
7,000	1,200	20,000	2,500	20,000	2,300
8,000	1,300	30,000	3,300	30,000	3,100
9,000	1,400	40,000	4,100	40,000	3,700
10,000	1,500	50,000	4,800	50,000	4,400
20,000	2,500	60,000	5,500	60,000	5,000
30,000	3,300	70,000	6,200	70,000	5,600
40,000	4,100	80,000	6,900	80,000	6,200
50,000	4,800	90,000	7,500	90,000	6,800
60,000	5,500	100,000	8,200	100,000	7,300
70,000	6,300	200,000	14,500	200,000	12,600
80,000	6,900	300,000	20,600	300,000	17,600
90,000	7,600	400,000	26,500	400,000	22,500
100,000	8,300	500,000	32,500	500,000	27,300
200,000	14,800	600,000	38,400	600,000	32,200
300,000	21,100	700,000	44,300	700,000	36,700
400,000	27,400	800,000	50,200	800,000	41,400
500,000	33,600	900,000	56,100	900,000	46,000
600,000	39,800	1,000,000	62,000	1,000,000	50,700
700,000	46,100	2,000,000	122,600	2,000,000	95,200
800,000	52,300	3,000,000	185,400	3,000,000	144,500
900,000	58,600	4,000,000	250,500	4,000,000	192,600
1,000,000	64,900	5,000,000	317,500	5,000,000	241,600
2,000,000	129,600	6,000,000	386,300	6,000,000	291,600
3,000,000	197,200	7,000,000	456,900	7,000,000	342,300
4,000,000	267,700	8,000,000	529,000	8,000,000	393,900
5,000,000	340,500	9,000,000	602,700	9,000,000	446,200
6,000,000	415,600	10,000,000	677,800	10,000,000	499,300
6,500,000	454,000	11,000,000	754,300	11,000,000	553,000
7,000,000	492,800	12,000,000	832,000	12,000,000	607,500
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.355970$ $b = 0.035230$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.414370$ $b = 0.034690$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.498340$ $b = 0.033190$	

## 2003 GES ESTIMATES AND STANDARD ERRORS

Crash Estimate (x)	Crash Standard Error (SE)	Vehicle Estimate (x)	Vehicle Standard Error (SE)**	Person Estimate (x)	Person Standard Error (SE)***
1,000	400	1,000	400	1,000	400
5,000	900	5,000	900	5,000	900
6,000	1,000	10,000	1,500	10,000	1,400
7,000	1,100	20,000	2,300	20,000	2,200
8,000	1,200	30,000	3,100	30,000	2,900
9,000	1,300	40,000	3,900	40,000	3,500
10,000	1,400	50,000	4,600	50,000	4,200
20,000	2,300	60,000	5,300	60,000	4,800
30,000	3,100	70,000	6,000	70,000	5,400
40,000	3,900	80,000	6,600	80,000	5,900
50,000	4,600	90,000	7,300	90,000	6,500
60,000	5,300	100,000	8,000	100,000	7,100
70,000	6,000	200,000	14,300	200,000	12,300
80,000	6,700	300,000	20,400	300,000	17,400
90,000	7,400	400,000	26,500	400,000	22,300
100,000	8,000	500,000	32,600	500,000	27,200
200,000	14,500	600,000	38,600	600,000	32,000
300,000	20,900	700,000	44,700	700,000	36,800
400,000	27,200	800,000	50,900	800,000	41,600
500,000	33,500	900,000	57,000	900,000	46,500
600,000	39,900	1,000,000	63,200	1,000,000	51,300
700,000	46,300	2,000,000	126,900	2,000,000	99,900
800,000	52,700	3,000,000	194,000	3,000,000	149,900
900,000	59,200	4,000,000	263,900	4,000,000	201,200
1,000,000	65,700	5,000,000	336,400	5,000,000	253,800
2,000,000	133,500	6,000,000	411,300	6,000,000	307,600
3,000,000	205,200	7,000,000	488,400	7,000,000	362,600
4,000,000	280,500	8,000,000	567,500	8,000,000	418,600
5,000,000	359,000	9,000,000	648,600	9,000,000	475,700
6,000,000	440,200	10,000,000	731,500	10,000,000	533,700
6,500,000	481,900	11,000,000	816,100	11,000,000	592,600
7,000,000	524,100	12,000,000	902,400	12,000,000	652,400
* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.208860$ $b = 0.036070$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.272400$ $b = 0.035530$		* $SE = e^{a+b(\ln X)^2}$ , where $a = 4.357200$ $b = 0.033990$	

**APPENDIX E: Analytical Data Classification of Select GES Variable**

Several variables in the GES are classified or collapsed according to analytical needs. In various NCSA's published reports and analysis, select GES variables have been given a standard classification. This section will attempt to show how GES variables are classified, assisting users in understanding and duplicating statistics presented in NCSA's published reports.

Earlier publications using only GES data included the fatal crash data from the GES, but this method is no longer in practice. For analytical purposes, fatal crashes and fatalities are extracted from the Fatality Analysis Reporting System (FARS), not GES. FARS contains data on a census of fatal traffic crashes within the 50 states, the District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway customarily open to the public and result in the death of a person (occupant of a vehicle or nonmotorist) **within 30 days of the crash**. Since FARS contains records on **all** fatal crashes, it's a more accurate representation of fatal crashes and fatalities than the **sample** contained in GES.

It is important to note that these are NCSA's classifications and are subject to modification.

The following tables show the specific coding scheme of select GES variables that are used in NCSA's publications and analysis:



**Univariate Maximum Injury Severity in Crash**

GES DESCRIPTION	CODE	CRASH SEVERITY CLASS
	1988 - Later	
No Injury	0	Property-Damage-Only Crash
Possible Injury	1	Injury Crash
Nonincapacitating	2	Injury Crash
Incapacitating	3	Injury Crash
Fatal*	4	Fatal Crash
Unknown Injury Severity	5	Injury Crash
Died Prior	6	Property-Damage-Only Crash
No Person Coded in the Crash	8	Property-Damage-Only Crash

\* Fatal counts from the FARS are used in NCSA's publications and analysis.

**Injury Severity**

<b>GES DESCRIPTION</b>	<b>CODE</b>	<b>INJURY SEVERITY CLASS</b>
	<b>1988 - Later</b>	
No Injury (O)	0	Not Injured
Possible Injury (C)	1	Injured
Nonincapacitating (B)	2	Injured
Incapacitating (A)	3	Injured
Fatal (K)*	4	Killed
Unknown Injury Severity (U)	5	Injured
Died Prior	6	Not Injured

\* Fatality counts from the FARS are used in NCSA's publications and analysis.

**Body Type**

BODY TYPE CLASS	GES CODES	
	1988 - 1991	1992-Later
Passenger Cars	1-11 (and 17 starting in 1999)	
Passenger Vehicles	1-11, 14-22, 24-41, 43-48 (for 1993 & later add new body type codes <b>24 &amp; 25</b> )	
Light Trucks/ Vans/Utility Vehicles	14, 20-41, 47, 48	14-22, 28-41, 45, 48 (for 1993 & later add new body type codes <b>24 &amp; 25</b> )
Medium Trucks	(60,68) and ( <b>Vehicle Trailing</b> = 0 or 9)	(60,64,78) and ( <b>Vehicle Trailing</b> = 0 or 9)
Heavy/Combination Trucks	((60,68) and ( <b>Vehicle Trailing</b> =1-4)) or 65	((60,64,78) and ( <b>Vehicle Trailing</b> =1-4)) or 66
Large Trucks	60, 65, 68	60, 64,66,78
Buses	50-59	
Motored Cycles	70-79	80-89
Other Vehicles	12, 42, 63, 80-89 (for 1990 and 1991 add new body type code <b>13</b> )	12, 13, 23, 42, 65, 90-97

Note: In 1993 & later, when **School Buses** includes body type code **24** (van-based school bus) and **Transit Buses** includes body type code **25** (van-based transit bus).

**Person Type**

GES DESCRIPTION	CODE	PERSON TYPE CLASS
	1988 - Later	
Driver of a Motor Vehicle in Transport	1	Driver
Passenger of a Motor Vehicle in Transport	2	Passenger
Occupant of a Motor Vehicle Not in Transport	3	Other Nonmotorist
Occupant of a Non-Motor Vehicle in Transport	4	Other Nonmotorist
Pedestrian	5	Pedestrian
Cyclist (Pedalcyclist)	6	Pedalcyclist
Other or Unknown Non-Occupant	8	Other Nonmotorist
Driver, Passenger, or Unknown Occupant Type in a Motor Vehicle in Transport	1,2,9	Occupant

**Restraint System Use**

GES DESCRIPTION	CODE			RESTRAINT CLASS
	1988-1991	1992-1994	1995-later	
None Used or Not Applicable	0			Restraint Not Used
Lap/Shoulder Belt	1			Restraint Used
Lap Belt	2			Restraint Used
Shoulder Belt	3			Restraint Used
Air Bag Deployed	4	-	-	Restraint Used
Air Bag Deployed & Lap/Shoulder Belt	5	-	-	Restraint Used
Child Safety Seat	6			Restraint Used
Motorcycle Helmet	7		5	Restraint Used
None Available	-	-	7	Restraint Not Used
Restraint Used - Specifics Unknown or Other	8			Restraint Used
Unknown if Used	9			Restraint Use Unknown

**Univariate Traffic Control Device**

CONTROL DEVICE CLASS	GES CODES	
	1988 - 1989	1990 - later
None	00	
Traffic Signal	01, 02, 03, 04, 08, 09	01, 04, 08, 09
Stop Sign	11	21
Other	12-14, 18,19,21,31,32,97,98	22,23,28,29, 40-43,49,51,61,62,97,98